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1888
CENTENNIAL

EXPOSITION
OF THE
OHIO VALLEY

CENTRAL STATES
CINCINNATI,
O.U.S.A.
OFFICIAL GUIDE



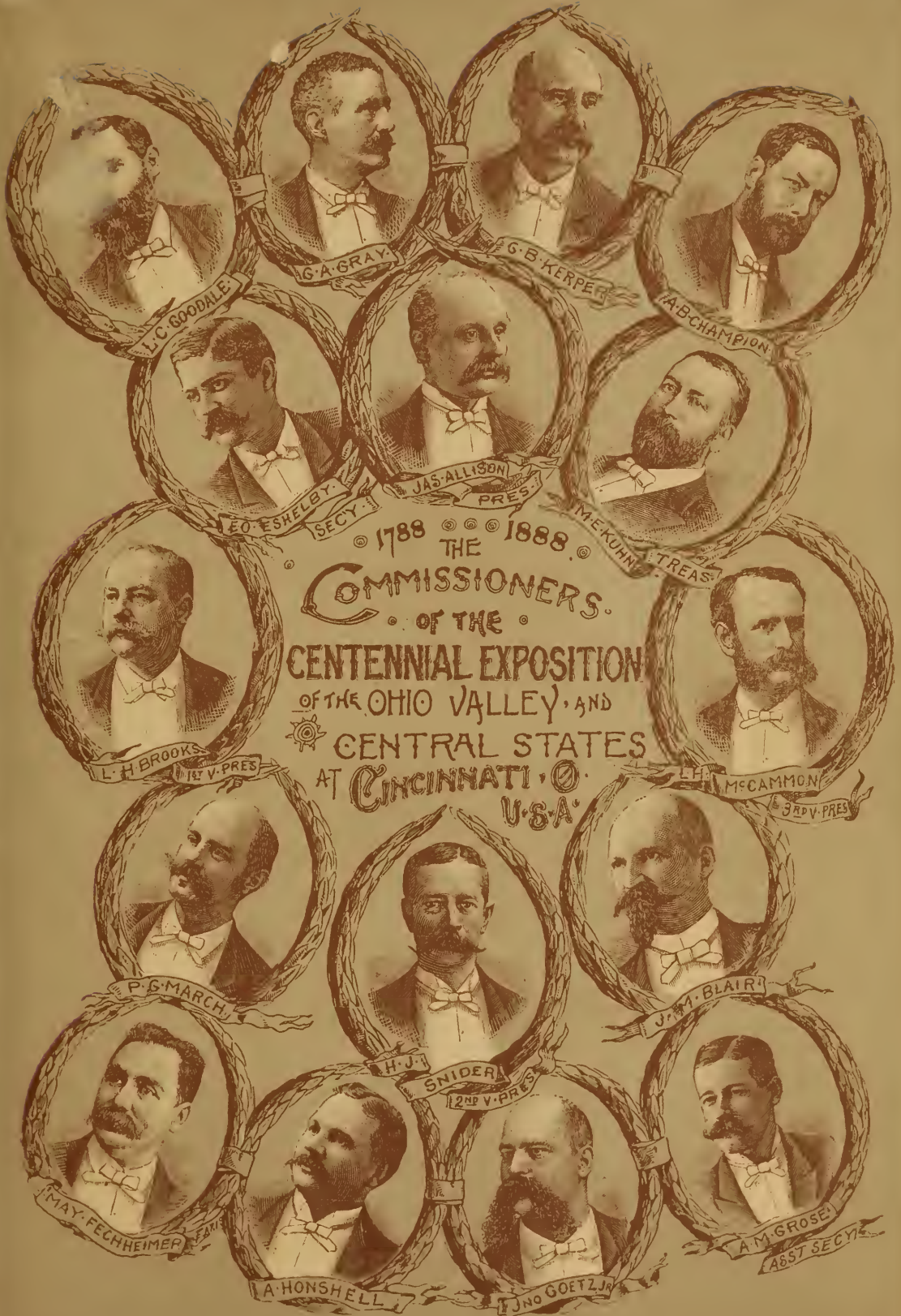
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 THE
COMMISSIONERS.
 OF THE
CENTENNIAL EXPOSITION
 OF THE OHIO VALLEY AND
 CENTRAL STATES
 AT CINCINNATI, O.
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CENTENNIAL EXPOSITION

— OF THE —

OHIO VALLEY AND CENTRAL STATES.

*Cincinnati Centennial Exposition of the Ohio Valley
and Central States 1888*

CINCINNATI, O., U. S. A.

1888.

Printed by the Authority and under the Direction of the
Exposition Commissioners.

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CINCINNATI CENTENNIAL EXPOSITION

— OF THE —

OHIO VALLEY AND CENTRAL STATES.



ITS ORIGIN AND A SKETCH OF ITS PROGRESS.

WHEN The Semi-Centennial Anniversary of the Settlement of the City of Cincinnati was celebrated in 1838, such was the success of the occasion, and the enthusiasm engendered thereby, that in good faith and with seeming zeal a committee was appointed to see to it "that the One Hundredth Anniversary of the Settlement of Cincinnati, occurring in the year 1888, should be properly celebrated." That committee, it should be remembered with bowed heads, have long since sent

States of the Union, and should be appropriately observed and celebrated in order that the progress of the century may be noted ; and,

"WHEREAS, No better way can be devised for such purpose than by an Exposition of Agriculture, Mechanics, Commerce and Art, to be held in a city near the center of population and most accessible to our sister States ; and,

"WHEREAS, The city of Cincinnati is so situated, and is the proper place for holding such Exposition; and, whereas, the Chamber of Commerce, the Board of Trade, and the Ohio Mechanics' Institute of that city have undertaken the organization and carrying on of 'The Centennial Exposition of the Ohio Valley and Central States,' to be held in Cincinnati in the year 1888, and have appointed a Board of Commissioners of leading citizens of that city for such purpose; and, whereas, said bodies and said commissioners have petitioned the General Assembly for its approval of and co-operation in said undertaking; therefore, be it

"Resolved by the General Assembly of the State of Ohio, That hereby there be extended to 'The Centennial Exposition of the Ohio Valley and Central States,' to be held in the city of Cincinnati in the Centennial year, 1888, the hearty approval and support of this body, the people of the State of Ohio; and in their behalf we ask for this Board and Exposition the co-operation and support of the Federal Government, and our sister States, and especially the Central States of the Union.

"Resolved, That the Governor of this State be requested and empowered to appoint five honorary Commissioners from the State of Ohio to represent the State in the preparation for and carrying on of this Centennial Exposition.

"Resolved, That the General Assembly of the State of Ohio ask, for the support of this great undertaking, the assistance and co-operation of the Federal Government, our sister States, and especially the Central States of West Virginia, Pennsylvania, Kentucky, Tennessee, Indiana, Illinois and Michigan, and that they be requested to appoint five honorary Commissioners each, to assist in the organization and carrying on of this Centennial Exposition.

"Resolved, That a copy of these resolutions be furnished the President and Congress of the United States, the Executive and Legislatures of the several States, and that in the name of the State of Ohio the Governor be requested to solicit of the several States and Government immediate action."

In conformity with these resolutions the Governor of Ohio issued invitations to other States, and in response the Legislatures of the Central States passed formal resolutions of acceptance. Honorary Commissioners were appointed therefrom, which, with the Governors of these States, the Governor of Ohio, and the Commissioners from Cincinnati and other cities, constituted the Board under whose charge the Centennial Exposition is held. And thus are united in one great undertaking mighty cities and States.

In order to insure success, the citizens of Cincinnati, with but little effort, raised and contributed to the enterprise as a guarantee fund the magnificent sum of one million and fifty thousand dollars, and thus so substantially backed, the Board of Commissioners, since the beginning of this organization in 1887, worked actively to carry out the enterprise. Much thought and attention was given to the location of the buildings.

Permanent Exposition buildings have been erected in the heart of the city at an expense of one million dollars. After much deliberation, it was concluded to make these buildings the nucleus of the Exposition. Opposite these buildings was the open ground, known as Washington Park, a delightful and cooling retreat for the residents of its neighborhood.

In the rear of the permanent Exposition buildings is the Miami Canal, with a broad street upon each side. The consent of the Board of Public Affairs having been obtained, the citizens of the neighborhood yielded their prejudices, even in the instance of those upon Plum street, to their great inconvenience, and Washington Park became the site of the Main Exhibition Hall, two stories in height, cruciform in construction, extending 600 feet one way by 110 feet the other, and 400 by 110 in its cross section. Herein are the capacious and luxurious restaurants and cafes, and the offices for the various committees.

The United States Government occupies one whole wing of this building, and this space assigned still being insufficient, additional space was demanded. In accordance therewith, on the 13th of June contracts were let for the preparation of the annexes to this Washington Park



PERMANENT EXPOSITION BUILDINGS.

building, each about 150 by 120 feet, and all completed ready for occupancy on the first of July. These buildings alone are larger than those occupied by previous Expositions. The Washington Park building is connected with the permanent buildings by a covered bridge over Elm street. In the permanent buildings are Horticultural Hall, Pioneer Hall, Entertainment Hall, Education Hall, Women's Hall, and other halls devoted to special displays. In the rear of this building and immediately connecting therewith is the Machinery Hall, used for the mechanical display. It extends from Twelfth to Fifteenth street, a distance of 1,300 feet, with a width of 140, spanned by four bridges, and at either end are vast restaurants.

The space occupied by these buildings is greater than that covered by any building for exhibiting purposes on the Western continent.

The fifteen Commissioners appointed by the representative Boards of Cincinnati, constitute the Executive Board of the Exposition. The Honorary Commissioners appointed by various municipalities and States and elected by the Board, constitute the Advisory Board.

Upon the fifteen Commissioners devolve the greater part of the labor in connection with this enterprise. They are assisted by Associate Commissioners and Honorary Commissioners.

The buildings were contracted for in October, 1887, and completed March 31, 1888. On that day they were appropriately dedicated to Exposition purposes in the presence of one hundred thousand citizens.

In October, 1887, the first meeting of the active and honorary Commissioners took place, followed by a pleasant dinner at the Burnet House. In December following, the second meeting of the active and honorary Commissioners took place, followed by a banquet at the Grand Hotel.

June 9, 1888, the Press Headquarters were formally dedicated in the building, followed by a banquet at the Gibson House.

The Commissioners have extended their thanks to the various contractors and architects, who have, by their skill and energy, finished the buildings in which the Exposition is held.

Washington Park building and annexes were erected under the supervision of H. E. Siter, architect, and J. W. Cotteral & Co., contractors; Machinery Hall, under the direction of J. W. McLaughlin, architect, and Goldkamp & Carter, contractors.

WASHINGTON PARK BUILDING

This building has been designed to fill all the requirements of a structure intended for exhibition purposes, both in respect to the treatment of the exterior and in regard to the arrangement of the interior. It has been the intention of the architect to make a strong, substantial, economical structure and at the same time of a conspicuous design. The building is built in the shape of a cross, the idea in the first place being to leave the four corners of the park unobstructed, but when the Government made an appropriation for an exhibit, it was found that the space set apart for it was entirely inadequate, and therefore additions have been made to the building in the north-east and south-east corners. The dimensions of the building as it now stands are as follows: The main building from Pleasant street to 12th St. is 600 feet long by 400 feet; from Race to Elm, each wing 110 feet wide, with a Restaurant

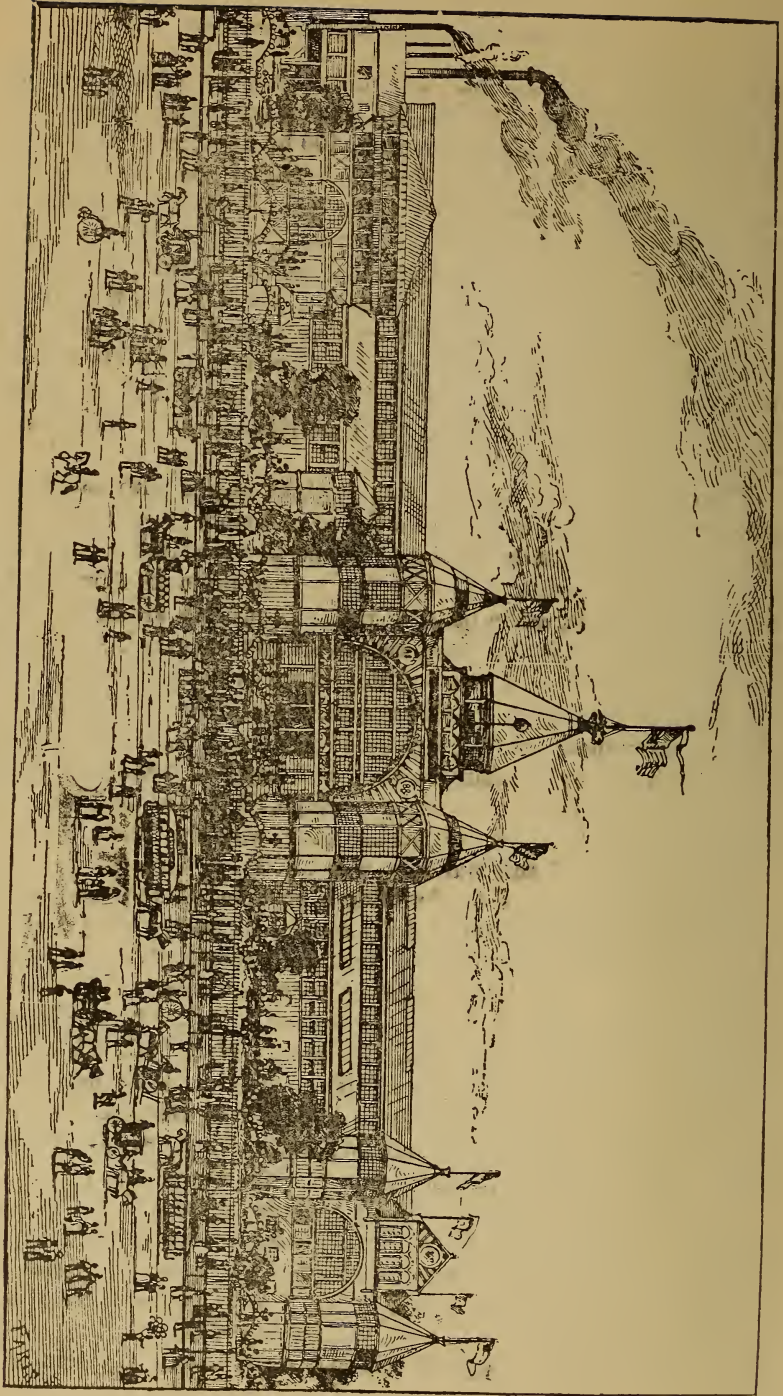
wing 80 by 125, on Elm St. The dimensions of additions recently built for the Government exhibit are, on the north-east corner, 128 by 138 feet, and on the south-east corner, 100 by 150 feet. This makes a total area of floor space in the Park building of about 245,500 square feet. Entrances have been provided on 12th, Race and Elm Sts., each entrance being flanked by large and imposing towers. At the intersection of the wings in the center there is placed a central feature, consisting of an octagonal tower, the extreme height of which from the first floor is about 150 feet. This tower can be seen from any part of the city, and will be illuminated at night by electric lights. On the Pleasant St. end of the building is placed the electric light plant, separated from the main building by a glass partition, so that the interior machinery can be viewed by visitors.

The Restaurant occupies a wing at right angles with the Electric Light Department, being placed on the second story of said wing with a broad, easy flight of stairs leading to it, and also provided with a passenger elevator. In connection with the restaurant a kitchen has been built, 50 by 60 feet, and a balcony running entirely around the room, where those who prefer the open air can sit and be served. In the east, west and south wings of the building there is a second story 50 feet wide, which is reached by ample stair cases and several elevators. The buildings throughout are fully lighted so that there is no place where the finest exhibit cannot be plainly seen. And especial attention has been given to the ventilation. An ornate bridge, 25 feet wide, connects the buildings on Elm St. at the restaurant wing, with the Music Hall.

The architect of this building was Mr. H. E. Siter, of Cincinnati.

The northern wing of the building is occupied by the various offices necessary for the transaction of daily routine business; near the bridge (eastern terminus) are the finely furnished rooms of the Ohio State Commissioners. The Ohio Commissioners are Gov. J. B. Foraker, Columbus; Hon. John C. Covert, Cleveland; Hon. Chris. Kinsinger, Cincinnati; Hon. Wm. Ronsheim, Cincinnati; Hon. F. C. Wiley, Lancaster; Hon. Elisha B. Hubbard, Tiffin; Hon. J. G. Butler, Youngstown; Hon. A. J. Warner, Marietta; Hon. Oliver Outcalt, Cincinnati; Hon. John M. Thomas, Springfield; Hon. A. L. Frazer, Clermont County; Hon. Nathan Drucker and Hon. John Simpkinson.

Opposite is the hospital, where persons indisposed are taken for treatment. Adjoining the Ohio State Commissioners' office is the office of the Printing and Advertising Committee, A. B. Champion, Chairman; Col. Morton L. Hawkins, Press Agent; next, on the east, is the office of the Chief of Police; next, the Bureau of Information. On the opposite side are the telegraph and telephone offices, the office of the



WASHINGTON PARK BUILDING.

Department of State, and Rules, Jurors and Awards, and a room for reporters, and the private dining room of the Commissioners. On the extreme eastern end of this row of offices is a door near the elevator connecting the restaurant, leading into the south-western portion of the park, where visitors can retire to eat their lunch and enjoy the shade of the trees, while reclining on benches provided for that purpose. On either side of the Elm street bridge are steps leading to the park. A couple of staircases were also placed on the eastern end of the bridge for the convenience of those who wish to ascend to the restaurant. The Park Building has several exits and entrances; one each on Elm street, one each on 12th street, and the like number on Race street. The principal entrance however, is on 12th street.

A fine view of the city can be had from the upper story of this building, and thousands of people avail themselves of the opportunity of getting a glimpse of the Queen City from this altitude. The building contains the Industrial Display, proper, and the elaborate and exhaustive Government Exhibit, the largest ever made in this country; and, also, the display of the Government of Ontario. On either side of the fountain is an elevator connecting with the upper and lower stories. The upper story is principally devoted to the piano display and exhibits of furniture. In this section also will be found the elegantly furnished room of the Cincinnati Press Club. Opposite the last mentioned is the work-room of the Printing and Advertising Department, Edward C. Cullen, General Advertising Agent.

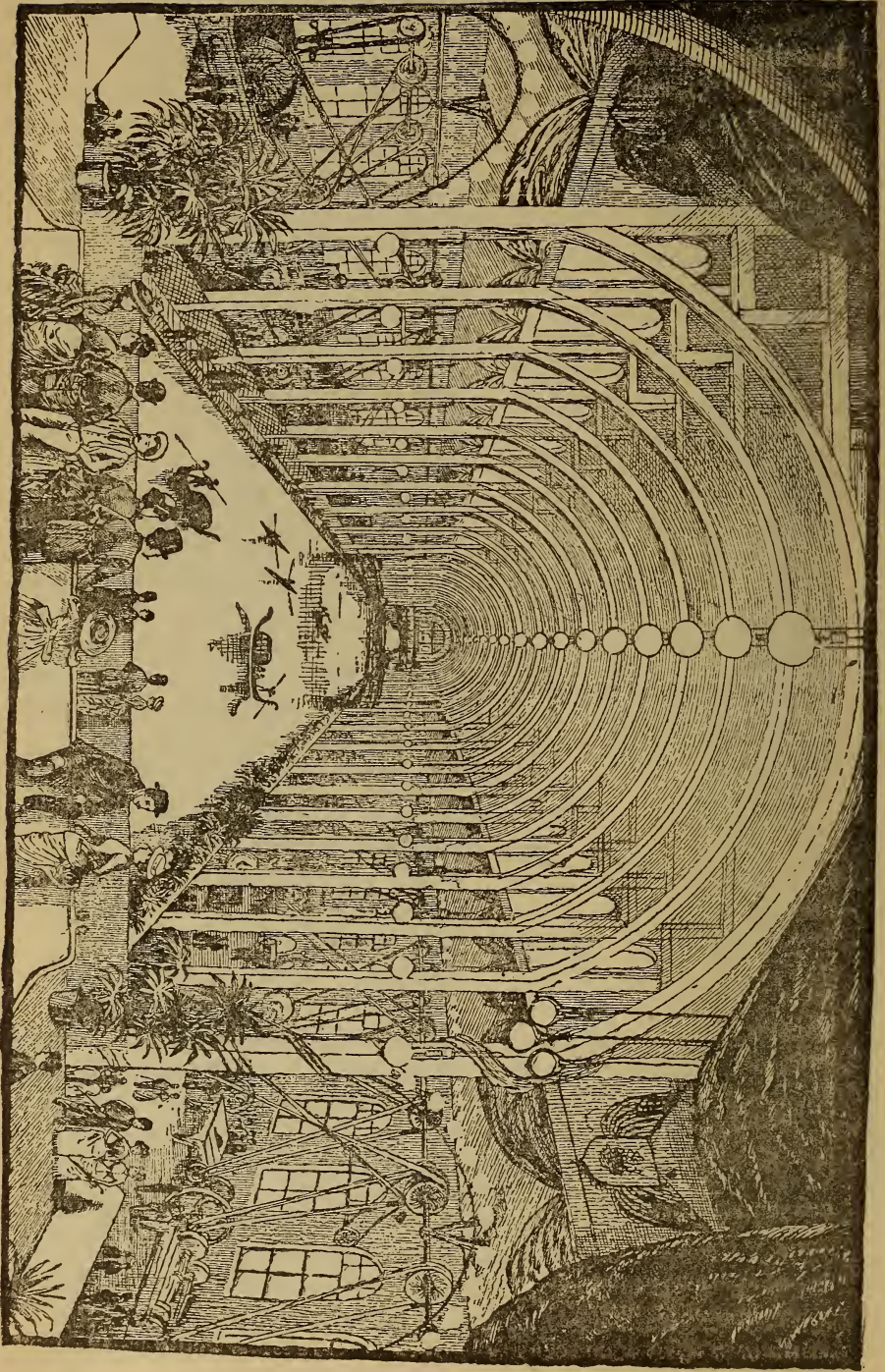
MACHINERY HALL.

This building is erected in the rear of the present Music Hall, on Plum St., and is nearly a quarter of a mile in length, extending from 12th St. on the South to 15th St. on the North, a distance of 1,248 feet.

The extreme width of the structure at either end is 114 feet, but for a distance of 400 feet in length in the center, widens out to 150 feet in width, connecting with Music Hall.

The central nave over the canal is 41 feet wide and 40 feet high from the water to the roof trusses, each of the side aisles is 36 feet 6 inches wide, except on the east side, 400 feet of this aisle is 72 feet in

MACHINERY HALL.



width. These aisles are devoted to the machinery exhibit, and are connected by four bridges crossing the canal.

At the North and South ends of the building are pavilions, each 214 feet square, with lofty ceilings; the southern pavilion also has a refreshment hall, 41 feet wide, and extending north 144 feet.

The floors of these pavilions are raised 14 feet above the level of machinery hall, supported on heavy trusses spanning the canal. The pavilions are open, allowing an uninterrupted view of the water, which, with the gondolas and other water crafts, will present a truly Venetian scene.

The building is well lighted in the day time by a continuous row of clerestory windows in the central nave and upon the exterior of the side aisles, and at night, by innumerable jets of gas and electric lights, the roof arches, placed every 16 feet, being clearly reflected in the water beneath.

The views in this building, from the end pavilions or the bridges, are something entirely unique. The designer was Mr. Jas. W. McLaughlin, Architect, of Cincinnati.

THE ELECTRIC LIGHT PLANT.

At the Centennial Exposition held in Philadelphia in 1876, electric lighting was unknown, and as a consequence the buildings could only be opened in the day time. Illumination by means of this subtle agent had shown promise in the form of what was little more than a laboratory toy, but it remained for the workers of the succeeding decade to curb it, harness it and make it a new servant in the industrial field.

The Commissioners recognizing the vast progress which had been made in this field, and knowing that in no other way could the immense buildings be lighted so as to make them attractive to the people who attend the Exposition in the evening, determined to make a special feature of electric lighting, and created a special department for the purpose, placing at its head Mr. W. N. Gray, of Cincinnati, an Electrical Engineer of wide experience, who planned the entire plant, the details of the construction being under the supervision of Mr. Luke Lilley, of Cincinnati, the Superintendent of Light.

Mr. Gray formulated a novel plan, which has proved an admirable one in bringing about the desired result. Instead of contracting with some one company to furnish the light, as has usually been done, he



VIEW OF THE DOME FROM
PARK HALL.

duced very cheaply. The same plan was adopted in the case of the power plant.

The Laidlaw & Dunn Machinery Company, Cincinnati, furnished two Galloway boilers of 300-horse power each.

The Buckeye Engine Company, of Salem, O., one 250-horse power engine, and one 125-horse power engine.

succeeded in inducing several companies to make exhibits of their apparatus, placing the same under the control of the Commissioners to be used for illumination.

In this way a variety of exhibits was obtained and the light was pro-



The Atlas Engine Company, of Indianapolis, one 200-horse power engine.

Russell & Co., of Massillon, O., one 125-horse power engine.

The Ball Engine Company, of Erie, Pa., one 125-horse power engine.

The Waterhouse Electric Company, of Hartford, Conn., eight thirty-light arc dynamos and two hundred and thirty arc lights.

The Western Electric Company, of Chicago, Ill., eight 30-arc light dynamos and two hundred and twenty-five arc lights.

The Mather Electric Company, of Manchester, Conn., the First Cincinnati Edison Illuminating Company, of Cincinnati, and the Queen City Electric Company, of Cincinnati, two 500 light incandescent dynamos and one thousand lamps each.

All of the above machinery, except the Ball engine and the Queen City Co.'s plants are located in the north wing of the Park Building, and form one of the special features of the same.

While comprising one plant the apparatus of the different companies is not combined, so that each forms an exhibit the same as if in separate spaces.

The Waterhouse Lamps are used for lighting the Park Building, about 120 lamps being required for this purpose alone, and also the Government Exhibit, the second floor of the Pioneer Hall, the Dome of the Park Building and all the outside lighting east of Elm Street.

The Western Electric Co.'s lamps are used for lighting the Canal Building, about 180 lamps being required, and also for the first floor of the Pioneer Hall, Horticultural Hall and all outside lighting west of Elm Street.

The Mather Incandescent Lamps are distributed through the upper floors of the Music Hall Building, about 500 being in the Art Gallery, and the balance in the Educational Department on the third floor of the building in Dexter Hall, the Commissioners' office, etc.

The Edison Lamps are used for displays in show cases and pavilions of exhibitors in the Park Building.

The plant of the Queen City Co., driven by the Ball engine, is located in the west end of Pioneer Hall, and the lamps are used for decorations and illumination in the Music Hall and its corridors.

A special feature of the Exposition is the outside illumination, and the arrangement of the 100 arc lamps used has been very effective. The streets are brilliantly lighted with 2000 candle power lamps, the faces of the buildings are decorated with rows of lamps, and above all is 24,000 candle power of light shed over the buildings, outlining their forms from the circle of lamps on the Dome.



In addition to all of this the Commissioners arranged for novelty displays, such as the colored decorations in the Horticultural Hall, the Revolving Garden, Christmas Trees, and the Fountain in the Park Building, the number of lamps used being about 2000, the whole display being something new in this part of the country and making a very striking feature of the Exposition.

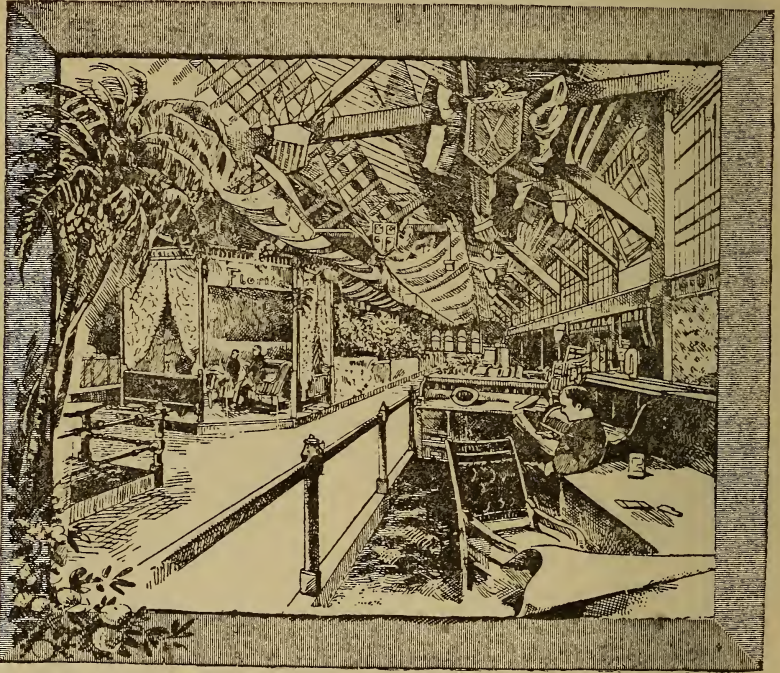
THE ORDINANCE OF 1787.

The memorable ordinance of July 13, 1787, not only fixed by metes and bounds the great domain of the Northwestern Territory, and carved out of it the three pioneer States, Ohio, Indiana, and Illinois, with provisions for a further subdivision into two more, but also established therein forever the incontrovertible principles of absolute liberty of thought and action which characterize American citizenship to-day: By act of the first Congress assembled, (approved August 7, 1789,) the binding force of this ordinance was formally recognized, and its provisions adopted by the Federal Congress. Under its wise and beneficent measures the population of the Northwestern Territory has increased to nearly 20,000,000, or one-third of that of the whole United States, vast industries have been fostered and developed therein, the arts and sciences have flourished, and, in a word, it has become the great producing center of the nation.

It may not be uninteresting at this time to examine cursorily, but with as much care as time and space will allow, into the various features of this ordinance which have resulted in so much public benefit; and first, briefly, as to its origin:

Pass over the disputed possession of this territory by England and France, and take for a point of departure the period succeeding the close of the War of Independence. The controversies between the several States as to the right of possession need no reflections at this time. The period of the organization of the Ohio Company in New England, in 1786, is the one which weighs upon us at this time. They were veterans in that pioneer syndicate, and in the far West they hoped to retrieve their fortunes sacrificed in their seven years' struggle for their liberties. The first purchase was a million and a half acres, "lying on the Ohio, including the mouths of the Muskingum and Hockhocking, for a million dollars." The first settlement was at Marietta. The second purchase resulted in the sale of 311,682 acres between the Great and

Little Miami. These were the beginning of the settlement of the Northwestern Territory; the first antedated, the last was subsequent to, the date of the Ordinance of 1787. The demand for these lands called the attention of Congress to the necessity of a proper government for the new territory; hence the ordinance. "The framer," says Salmon P. Chase, in his Statutes of Ohio, "and, as to some most important provisions, the author of this great fundamental law, destined to exert a mighty and enduring influence upon the happiness and prosperity of millions, was Nathan Dane of Massachusetts."

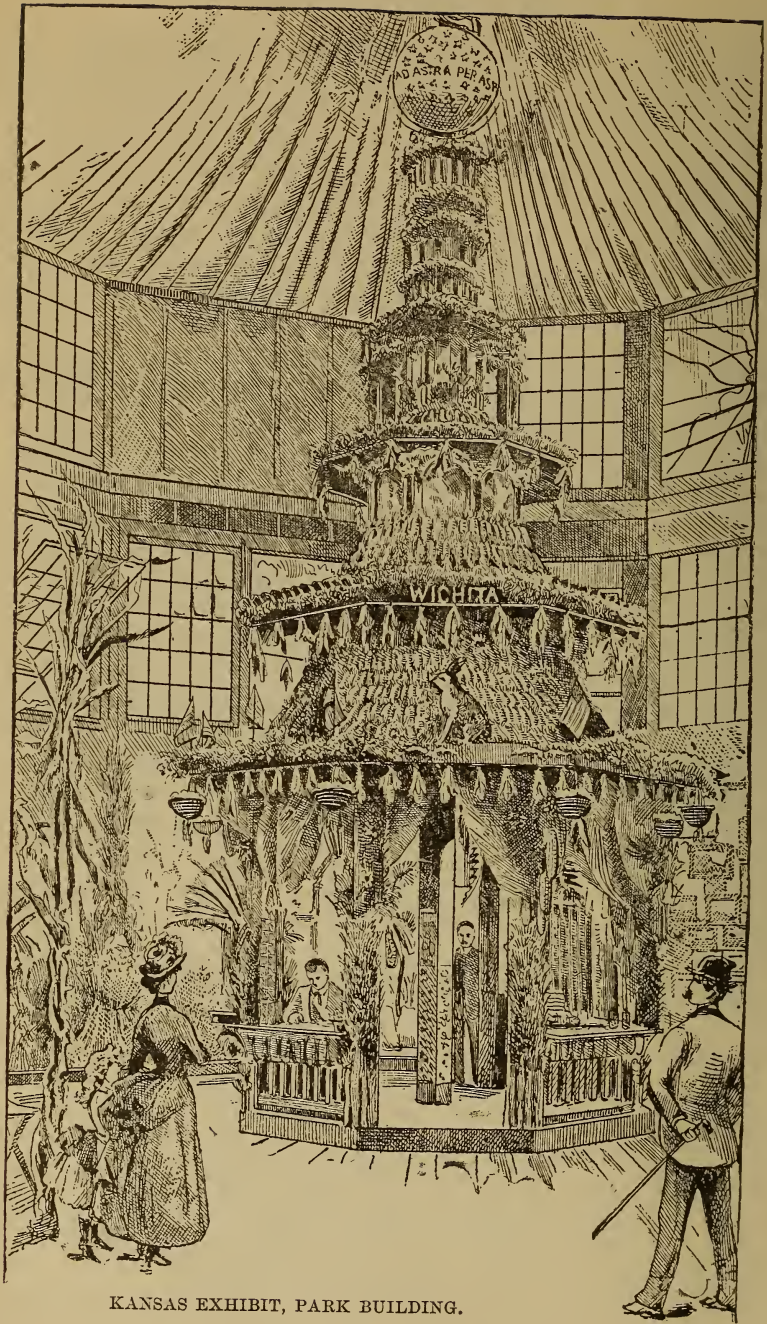


VIEW IN SECOND STORY PARK BUILDING, LOOKING SOUTH.

The first provision established the territory in one territory, with the proviso that it may be divided into two districts should Congress at any time thereafter deem it expedient. The second provided for the descent of the intestates' estate, the disposition of estates by will, of real estate by deed, and the transfer of personal property. The third established the territorial government, prescribing its duties and powers and terms of service of the incumbents. The fourth stipulated certain articles of compact between the original States and the people and States in the territory; and in six articles hereunder declares in favor of religious liberty; secure the benefit of habeus corpus, trial by jury,

representation of the people and judicial proceeding according to the course of the common law; encourages education and the inculcation of religious and moral principles. It also ordains that the territory and States formed therefrom are to remain a part of the Union, and are subject to its or their proportion of the Federal debts. It limits the number of States to three and fixes their bounds; but it also provides that from the northern portions of the Western and Central States two others may be portioned off, and no more; and, moreover, this power of laying off one or more States is reserved to Congress. It also declares under what circumstances of time and population any State may be admitted to the Union. The sixth article prohibits forever the existence of slavery or involuntary servitude within the Northwestern Territory, otherwise than for crime, and only then after due conviction.

It can scarcely be comprehended, even after a studious reading of this profound document, how much wisdom and learning is therein embodied. It should be remembered that at the time when the Ordinance of 1787 was elaborated, the thirteen colonial States were bound together only by the slender tie of empiricism; that a government of the people, for the people and by the people was still to be built out of a confederacy of colonies established primarily for the purposes of common defense against one of the most imposing monarchies of that age; and that even within two years from the date of this Ordinance of 1787, the original articles of that colonial confederation were abandoned for the perennial constitution of the United States, which has survived the mutations of time, through peace and war, union and discord, and under which the American people have now wrought out for themselves a perpetuation of their republican kingship. But examine, if you please, the grasp of intellect and provident regard with which that colonial Solon has framed each proposition. Take for instance the formation of the territorial government as suggested in the ordinance. The Governor, until the territory shall become a State, is appointed by Congress. The Legislature is composed of two bodies, the Legislative Council and the House of Representatives. The latter are to hold office by virtue of a popular franchise; the former, five in number, are to be selected by Congress from ten names nominated to that body by the Territorial Governor. In this instance the General Government maintains an interest in the dependent territory. Again, under the present constitution—that government, “*aere perennium*” to the memory of Alexander Hamilton—the United States Senators are elected by the State Legislatures, because, as the great statesman laid down, “such a course favors select appointments and gives to the State Governments such an agency in the formation of the Federal Government as must secure the authority of the former and form a convenient link between the two systems.”



KANSAS EXHIBIT, PARK BUILDING.

If now it be considered under what a strain each component State of the first confederacy was placed, is it not unfair to assume that the forming of this ordinance was no easy task, because the distinction between a State and its sovereignty, and its allegiance to the Union of States had not been definitely fixed; and there was danger that if an unwise precedent be established it might add to the prejudice of the Union; as it was, the ordinance was passed by a unanimous voice.

Likewise, in the organization of the militia, the same care is observed to discriminate between the government's relation to the territory, and the rights of the territory or virtually of the new State. "The Governor for the time being shall be commander-in-chief of the militia, appoint and commission all officers of the same below the rank of general officers. All general officers shall be appointed and commissioned by Congress."

Again: "The Governor, Judges, Legislative Council, Secretary and such other officers as Congress shall appoint in the district, shall take an oath or affirmation of fidelity, and of office—the Governor before the President of Congress, and all other officers before the Governor. As soon as a Legislature shall be formed in the district, the Council and House, assembled in one room, shall have authority by joint ballot to elect a delegate to Congress," etc.

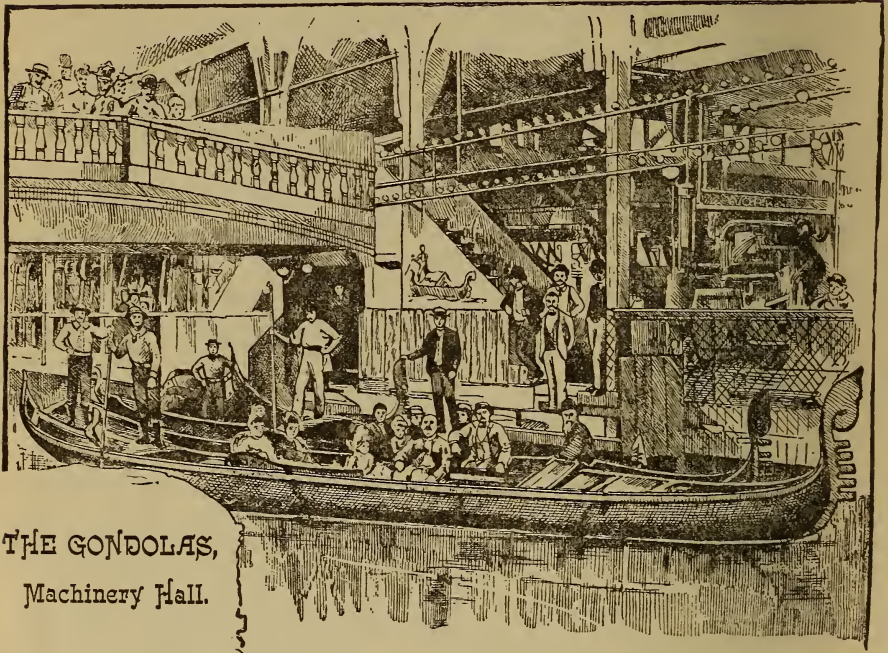
The six succeeding articles are the fundamental principles of our civil and religious liberty, upon which has been erected this great modern republic. And the perpetual prohibition of slavery from this favored realm, has obtained to the development of our institutions, the expansion of our industries, and to a general prosperity unexcelled, if not unequalled, throughout the land.

And who were the settlers? It was stated in the beginning that they were veterans who had come out of the Revolutionary War, with the honorable scars of many a hard fought contest, their swords, and some well-nigh irredeemable certificates. They had given the best part of their lives to the struggle for liberty, and, with nothing but their undaunted spirit, they went out to help build up the heritage they had won by their valor. They came from Saratoga, and Camden, Yorktown, and Eutaw, and from the swamps of the Santee and Wateree.

The fame of the Northwestern Territory had come to them long since. De Soto, 250 years before, had penetrated to the headwaters of the Mississippi, but his accounts then were regarded as fabulous. Daniel Boone, the intrepid huntsman of the Dark and Bloody Ground, had passed a tedious and unwilling sojourn in the easterly portion, and returned only to praise the land of his captivity.

And so a contract was made for a million and a half acres lying on the Ohio, the Muskingum, and Hockhocking Rivers; General Rufus

Putnam entered upon it with a band of sturdy veterans, and from their primitive collection of rude cabins has been built up the city of Marietta. Then came General John Cleves Symmes, and Israel Ludlow, Robert Caldwell, Scott Treverse, and Even Shelby, the latter with the smoke of King's Mountain in his eyes, and the shouts of the Watonga mountaineers still ringing in his ears. And from their sufferings and hardships, planning and planting, has grown up the city of Cincinnati, which for sixty years was the metropolitan, and is, to-day, the Queen City of the West.



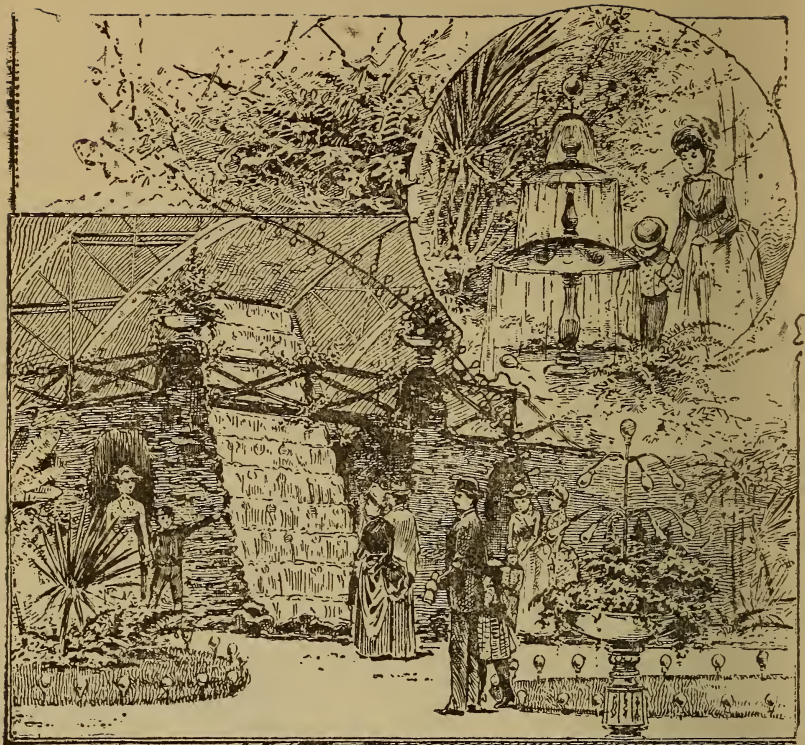
THE GONDOLAS,
Machinery Hall.

A GLIMPSE AT THE LAST CENTURY.

Two great warpaths once led the way from the great lakes and the seaboard to the dark and bloody battle grounds of Kentucky. They met at a point on the Ohio, opposite the mouth of the Licking River, and here, in the stillness of midnight, under the cover of darkness, once the red man, coming down by either path, crossed over the Ohio to return with the barbaric trophies of his prowess at arms, or to leave his bones to whiten where he fell. Such is the fortune of war.

To-day, two main arteries of traffic mark the courses of these respective warpaths to their place of meeting; the one tends direct from the north, from the western shore of Lake Erie; the other follows the meanderings of the Little Miami River, coming from far beyond its source. The supremacy of this convergent point of warpath then and iron highways now, both the barbarian and his enlightened successor have acknowledged; and in the transition from barbarism to enlightenment, this rallying point has become a center of population, industry and wealth. Here is to-day the city of Cincinnati. Within a radius of five miles from its business center are half a million of people, and in the lapse of a century, this community has kept pace with the development of civilization. "There are few nations in the world," writes Dr. Johnson, "more talked of and less known than the Chinese." With some allowance, the same may be said of this city; that it may have been outstripped in population within the last quarter of a century, in a few instances, is true; but for substantiality of progress and development, it is outranked by none. There is, however, not a little truth in the proposition of the eminent English scholar, above quoted, in its bearing upon this city; that it is more talked of, and less known than many other centers of population. And this is proven in the general expressions of many who come here, having visited all the prominent cities of America and the old world. "We expected," they say, "to find a thriving western city; but what is more, we find an advanced American metropolis, cultivated, refined, and wealthy, whose leading business men are energetic, enterprising, and public spirited."

What are the chief causes of prosperity in the city of Cincinnati, is a question which will admit of an unlimited number of answers. A brief glance at the history of this city may allow the reader to draw his own conclusions.



SCENES IN HORTICULTURAL HALL.

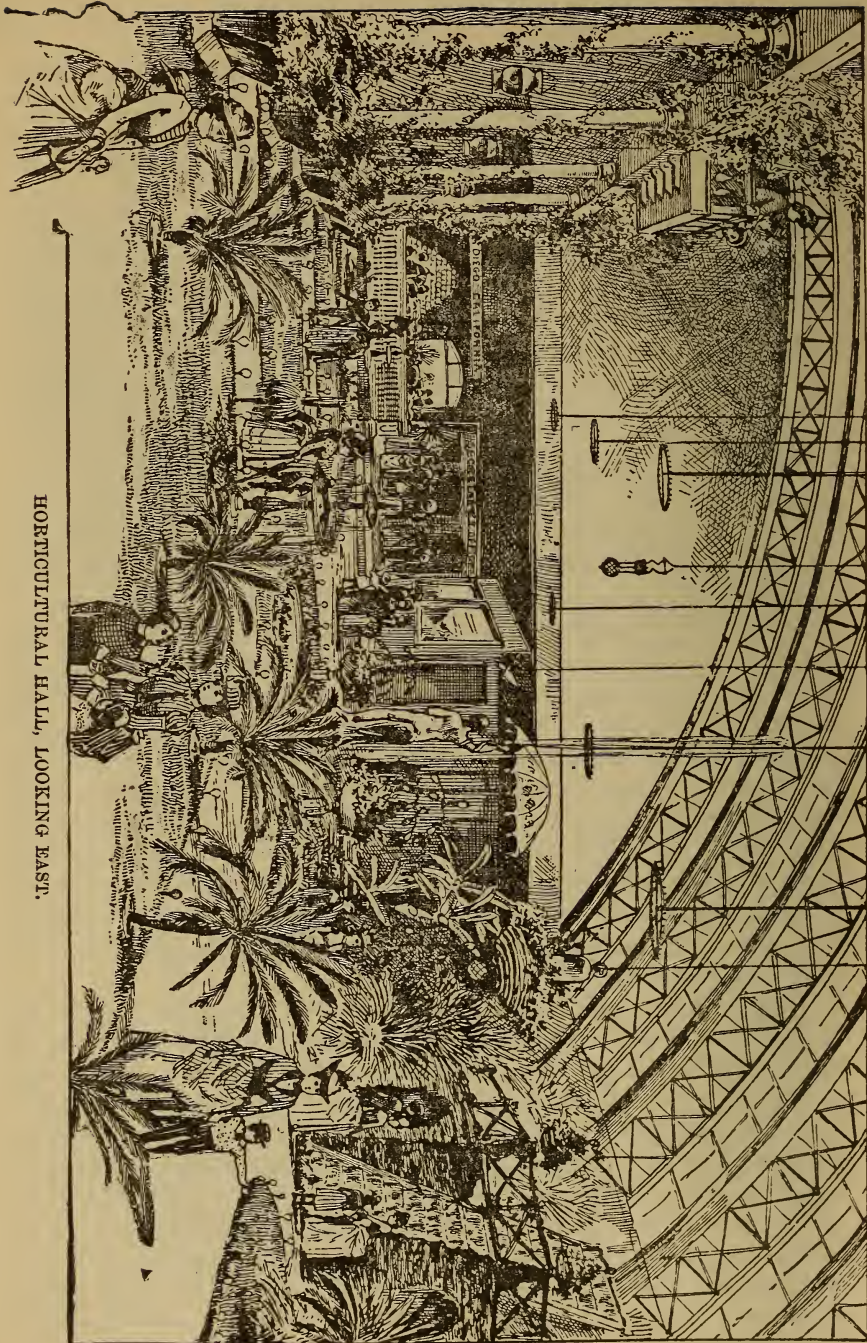
The earliest annals of Cincinnati are too well known to require a minute recital. In brief, it was first settled under the name of Losantiville, in December, 1788, by Israel Ludlow, with a score and more of fellow pioneers. Governor St. Clair, three years afterward, came to the settlement, established the first judicial court, and changed the name to Cincinnati, after the historic military order, of which he was a member.

It had its historic age. The clear ring of the forester's axe alternated with the sharp crack of his rifle; the clearing of forests and the building up of the settlement was not accomplished without loss of life. And at one time, so frequent was the latter, during the terrible war that preceded the avenging crusade of Mad Anthony Wayne, that the population became decimated, and the survivors suffered the gravest discouragements.

But that was an intrepid race that came down "La Belle Riviere" in flat-boats; and, although the Indian troubles stifled for a period the influx of settlers, and now and then lessened their numbers, the surviving frontiersmen, undaunted, fought out for themselves and their posterity the blessings of life, liberty, and the pursuit of happiness.

The first quarter of a century of the young settlement witnessed also the rise of a spirit for home manufactures. The prejudices against articles of foreign manufacture early took deep root in the American mind, and nowhere with more vehemence than among those early pioneers, who, at the close of the Revolution, sought for new homes in the boundless west. Again, the frontier town of Cincinnati was far remote from the borders of civilization; in the first years of its settlement but a very infrequent communication was enjoyed with the east, and for many years this lone settlement had enough to think of in thinning the forests and clearing out the savages, without offering inducements for mutual intercourse, commercial, social, and otherwise, with its far-away neighbors.

The gradual settlement of the city and vicinity, however, brought the village into a closer relationship with the east; the dawn of prosperity begot a longing for higher cultivation and refinement, and this evinced a demand for home industries. The old prejudice against English manufactures was still in vogue, and so far as was possible, these were substituted by those of home manufacture. And right here was instituted that energy, enterprise, and public spirit for which the city of Cincinnati was ever afterward noted. It stopped for no obstacles, it knew no discouragements, it acknowledged no defeats. Thirty years after, with a population of less than 10,000, there were more than two hundred shops, manufactories, and foundries, and one-sixth of the villagers were the operators. The manufactures were diversified; there were woolen manufactories, boots and shoes, hardware, knives, harness and saddlery



HORTICULTURAL HALL, LOOKING EAST.

—every thing needed, not only there, but in many instances on demand in the east.

Ten years later, in 1828, with a population more than double, the leading citizens recognizing the value of intelligent and skilled labor, proposed and at once organized an institution for the benefit of the laboring classes, under the name of the Ohio Mechanics' Institute. This institution has not only survived all the vicissitudes of time, but has gathered strength and grown in usefulness. It has been the ready coadjutor of the infant industries of Cincinnati and the Ohio Valley, and at the same time it has been the temple of knowledge to thousands of the working classes, many of whom, through the inspiration imbibed within its threshold, have arisen to honor and affluence throughout the land.

“Some of the noblest men of Cincinnati,” says a daily paper, “have come up through these ancient halls of the Institute.” “No money would repay me,” says an eminent teacher, “for going there for two hours at night, as I have done for six years; it is a pleasure to help these worthy boys upon their feet.”

Ten years later, in 1838, the industries had grown to such an extent the people demanded an exhibit of their progress from the heroic to the industrial age. Hence, the first industrial fair in America, if not in the world; and for twenty years the Ohio Mechanics' Institute Fairs became proverbial for their acknowledged influence upon the growing industries of the Ohio Valley, as well as for the endless profit and pleasure combined they afforded. The first fair was held at a once famous resort known as Madame Trollope's Bazar, on Third Street, near the corner of Broadway.

At the close of 1858, the shadows of a great contest coming, caused the abandonment of the Mechanics' Institute Fairs, to be revived again ten years later under newer, larger, and more auspicious circumstances than ever before. Cincinnati had long been recognized as the Queen City of the West and this honor had come to her more from her own home industries than from any accretion she had derived through other cities. The Board of Managers of the Mechanics' Institute at this time, 1868, called a joint meeting of the members of the Chamber of Commerce and the Board of Trade, and this tripartite syndicate, composed of the energy, genius, and capital of the city, established a permanent exposition of the industrial arts of Cincinnati, whose brilliant record needs no recital now—whose medal carries with it the attributive mark of excellence.

Thus it may be recognized that the history of Cincinnati from its primitive settlement is a record of industrial development. And a cursory examination of the statistics of growth will show that these

home industries, varied and of paramount interest to every section of the country, developed enormously. And, moreover, the interest which this city took in the creation and maintenance of a river commerce added fresh laurels to those she had received in other enterprises.

But industry and commerce were not the only vocation by which her citizens arose to honor and affluence. The development of her industries brought prosperity, prosperity was accompanied by affluence, in a few instances beyond the greatest expectations. The pioneer fathers had builded well. Affluence brought ambition for education, refinement, and luxuries. The Mechanics' Institute fostered a taste for the arts and sciences, music and the fine arts obtained a footing. The public school system, private institutions of education for the cultivation of music, painting, and the fine arts arose, and the Queen City early took her position in the van of culture and refinement. And there were not wanting those, who out of their affluence, dealt out bountifully to the benefit of the public.

The success of the Mechanics' Institute Fairs, during the twenty years of their continuance, as beforesaid, encouraged the managers to still more expanded efforts; the establishment of the Industrial Exposition of Cincinnati followed, and such was the success of this last enterprise, that when two years since the subject of an exposition which would be pertinent to the importance of the centennial year not only of this city but also of the Ohio Valley and the great Northwestern Territory was proposed, it was followed by immediate action.

The far-famed Music Hall and its accessory buildings, capacious as they were, must be reinforced by still more commodious edifices; and with the first efforts to create the necessary fund for the erection of the additional structures, and the capitalizing of the new enterprise, the Centennial Exposition of the Ohio Valley and the Central States was organized under the most auspicious beginnings.

The Board of Commissioners, with its honorary members, was constituted as follows:

CENTENNIAL EXPOSITION COMMISSIONERS, 1888.

JAMES ALLISON, *President.*

LEE H. BROOKS, *First Vice-President.*

HENRY J. SNIDER, *Second Vice-President.*

L. H. McCAMMON, *Third Vice-President.*

E. O. ESHELBY, *Secretary.*

M. E. KUHN, *Treasurer.*

CHAMBER OF COMMERCE.

LEE H. BROOKS,
Pres. The Brooks, Waterfield Co.

AUGUSTUS HONSHHELL,
Sec'y Cin'ti, Portsmouth, Big Sandy
and Pomeroy Packet Co.

LEVI C. GOODALE,
Pres. Cin'ti Chamber Commerce.

GEORGE B. KERPER,
Pres. Walnut Hills Cable Road.

E. O. ESHELBY,
City Comptroller.

BOARD OF TRADE.

M. E. KUHN,
Ex-Treas. 12th and 13th Cin. Ind. Expo.

HENRY J. SNIDER,
Pres. The Louis Snider's Sons Co.

J. M. BLAIR,
Of the J. M. Blair Brick Co.

JOHN GOETZ, JR.,
Of the Moerlein Brewing Co.

MAY FECHHEIMER,
Of Fechheimer Bros. & Co.

OHIO MECHANICS' INSTITUTE.

JAMES ALLISON,
Merchant.

L. H. McCAMMON,
President Builders' Exchange.

GEORGE A. GRAY, JR.,
Pres. G. A. Gray Co.

P. G. MARCH,
Manager Universal Radial Drill Co.

A. B. CHAMPION,
Attorney.

EXECUTIVE DEPARTMENT.

COMMITTEES :

Executive Committee.

Brooks, Allison, McCammon, Eshelby, Kuhn.

Special Committees.

Finance and Auditing—McCammon, Brooks, Snider.

Contract, Privileges and Legislation—Champion, Fechheimer, Blair, Brooks.

Printing and Advertising—Champion, McCammon, Goodale, Snider.

Space and Allotment—Snider, Blair, Gray.

Buildings—Blair, Snider, March, Gray, Honshell.

Transportation and Excursions—Waite, Honshell, Kerper, Goodale.

Rules, Jurors and Awards—Goodale, Brooks, Blair.

Departments.

Department of Foreign Exhibits—Champion, Brooks, Honshell.

Department of States—Goodale, and Honorary Commissioners of several States.

Department of Information—Honshell, McCammon, Fechheimer.

Agriculture and Agricultural Implements—March, Gray, Kerper.

Machinery and Mechanical Appliances—Gray, Kerper, March.

Science, Education and Historical Relics—Goetz, McCammon, Snider.

Music and Entertainments—Kerper, Champion, Honshell.

Horticulture, Floral Display and Decoration—McCammon, Fechheimer, Goodale.

Fine Arts and Ceramics—Fechheimer, Brooks, March, Honshell.

Textile Fabrics—Snider, Goodale, Fechheimer.

Women's Department—Goodale, Fechheimer, March.

Children's Department—Champion, Blair, McCammon.

Furniture and Household Appliances—March, Snider, Goodale.

Tobaccos, Liquors and Provisions—Brooks, McCammon, Goetz.

Railway Supplies, Hardware, Minerals and Metals—Kerper, March, Honshell.

Architecture and Buildings—Blair, Gray, March.

Exhibitions and Special Displays—Honshell, Kerper, Goetz.

HONORARY COMMISSIONERS.

WHO FORM THE

ADVISORY DEPARTMENT.

Ex Presidents of Cincinnati Industrial Expositions.

A. T. Goshorn.	W. H. Blymyer.
John J. Henderson.	Edmund H. Pendleton.
M. E. Ingalls.	R. H. Galbreath.
W. W. Peabody.	Edwin Stevens.

Department of Transportation.

C. C. Waite.

Corporation of Cincinnati.

Amor Smith, Mayor.	Chas. H. Stevens, President Board
Morris Bauer, President Board of	Aldermen.
Control.	Gustav Lowenstein.
Chas. F. McLean, Alderman.	A. M. Cohen.

Corporation of Covington, Ky.

S. W. Cofflin.	Lieut.-Gov. J. W. Bryan.	R. L. Mannen.
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Corporation of Newport, Ky.

Joseph A. Scarlett.	Hon. Al. Berry.	Geo. P. Wilshire.
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State of Ohio.

Gov. J. B. Foraker, Columbus.	Hon. Elisha B. Hubbard, Tiffin.
Hon. John C. Covert, Cleveland.	Hon. J. G. Butler, Youngstown.
Hon. Chris. Kinsinger, Cincinnati.	Hon. A. J. Warner, Marietta.
Hon. Wm. Ronsheim, Cincinnati.	Hon. Oliver Outcalt, Cincinnati.
Hon. F. C. Whiley, Lancaster.	Hon. John N. Thomas, Springfield.
Hon. A. L. Fraser, Clermont Co.	Hon. Nathan Drucker.
	Hon. John Simpkinson.

State of Kentucky.

Gov. S. B. Buckner, Frankfort.	Prof. John R. Proctor, Frankfort.
Hon. Thos. E. Moss, Paducah.	Col. John F. Hagar, Ashland.
Judge Mat. Walton, Lexington.	Hon. M. J. King, Newport.
Hon. R. C. Hemingray, Covington.	Col. F. P. Helm, Covington.
Hon. Young E. Allison, Louisville.	

State of Indiana.

Gov. Isaac P. Gray, Indianapolis.	Hon. Franklin Landers, Indianap'lis.
Hon. John W. Grubbs, Richmond.	Hon. Nathan Cadwallader, Union
Hon. John G. Shanklin, Evansville	City.
Hon. Albert A. Barnes, Indianapolis.	Hon. John H. Bass, Ft. Wayne.
Hon. Clem Studebaker, South Bend.	Hon. Anton Mayer, Terre Haute.

State of Illinois.

Gov. R. J. Oglesby, Springfield.	Col. Fred C. Pearce, Rockford.
Hon. John Ulrich, Decatur.	Hon. Daniel Berry, Carmi.
Hon. Orville A. Snedeker, Jerseyville.	Hon. Lorenzo Bull, Quincy.
Hon. John A. Roche, Mayor Chicago.	

State of West Virginia.

Gov. E. W. Wilson, Charleston.	Hon. John A. McGuffin, Sewell.
Hon. R. C. M. Lovell, Shrewsbury.	Hon. J. C. Anderson, Wheeling.
Hon. A. W. Woodford, Weston.	Hon. John Monroe, Romney.

State of Tennessee.

Gov. Robt. L. Taylor, Nashville.	Hon. Thos. H. Coldwell, Shelbyville.
Hon. R. L. C. White, Lebanon.	Hon. Napoleon Hill, Memphis.
Hon. Samuel Watkins, Columbus.	Hon. Tomlinson Fort, Chattanooga.

State of Pennsylvania.

Gov. James A. Beaver, Harrisburg.	Hon. L. D. Shoemaker, Wilkesbarre.
Hon. John Fritz, Bethlehem.	Hon. John W. Chalfant, Pittsburg.
Hon. Thos. Cochran, Philadelphia.	

State of Michigan.

Gov. Cyrus G. Luce, Lansing.	Hon. Davis H. Jerome, Saginaw.
Gen. W. H. Withington, Jackson.	Hon. J. H. Stone, Detroit.
Hon. Delos A. Blodgett, G'dRapids.	Hon. Clarence A. Black, Detroit.

State of Iowa.

Gov. Wm. Larrabee, Des Moines.	Hon. A. S. Garrison, Sioux City.
Hon. Stephen Irwin, Keokuk.	Col. J. M. Parker, Marshalltown.
Hon. T. J. Barclay, Sibley.	Hon. B. S. Shemershorn, Des Moines.

State of Missouri.

Hon. Chas. A. Hardin, Mexico.	Hon. J. M. Anthony, Fredericktown.
Judge Chas. G. Burton, Nevada.	Col. Vincent Marmaduke, St. Louis.
Judge O. M. Spencer, St. Joseph.	Hon. Rob't McElhenny, Springfield.
Hon. D. R. Francis, Mayor St. Louis.	

State of Kansas.

Gov. Jno. Martin, Topeka.	Hon. G. W. Clements, Wichita.
Hon. Geo. H. Case, Mankato.	Hon. W. S. Stambaugh, Abilene.
Hon. G. M. Stratton, Clay Center.	Hon. W. S. Lambert, Howard.

State of Georgia.

Gov. J. B. Gordon, Atlanta.	Hon. Julius L. Brown, Atlanta.
Hon. Pat. Walsh, Augusta.	Hon. Robert Falligant, Savannah.
Maj. J. F. Hanson, Columbus.	

State of South Carolina.

Hon. R. B. Rutledge, Charleston.	Hon. D. S. Henderson, Aiken.
Hon. W. C. Bennett, Abbeville.	Hon. David Cardwell, Columbia.
Hon. R. E. Mason, Westminster.	

Representatives of Foreign Governments Residing in Cincinnati.

C. Pollier, German Consul.	A. Fredin, French Consul.
A. Ravogli, Italian Consul.	P. Hartman, Belgian Consul.
R. M. Kurz, Swiss Consul.	

One million and fifty thousand dollars was raised among the business enterprises of Cincinnati as a guarantee fund, and the work of erecting the additional buildings begun without delay. Upon the first of June, and some weeks prior thereto, every thing was in readiness, the buildings completed at a cost of \$250,000, and paid for; every foot of space taken up, and all that remained to do was the receiving of the exhibits, their classification and arrangement.

It is difficult to imagine the endless amount of detail embraced within the preliminary work of preparation, and space does not permit of its

recital. It is sufficient to state, however, that from the beginning to the end the work has been executed without retardation or confusion.

The Exposition is held in three immense structures, and its organization embraces seventeen different departments. The Park Hall, Music Hall, and its associate buildings, and Machinery Hall, afford an available exhibiting space of 950,000 square feet; Park Hall is cruciform in shape. Machinery Hall is constructed over the canal, 1,300 feet long and 150 feet wide, and Music Hall, with Horticultural Hall to the south, and Pioneer Hall to the north, makes up the boundaries of the Centennial Exposition.

The departments into which the Exposition is divided are as follows:

ASSOCIATE COMMISSIONERS

— TO —

COMMITTEES AND DEPARTMENTS.

Department of States for Florida.

D. J. Mullaney.

Department of States for Georgia.

C. E. Harman.

Department of States for North Carolina.

Dr. A. E. Heighway.

Building Committee.

C. Kinsinger.

W. N. Gray.

H. E. Siter.

Department of Machinery.

Chas. A. Bauer, Springfield, O.

Nathan Steadman, Aurora, Ind.

Joel Sharp, Salem, O.

G. W. Howell, Covington, Ky.

Geo. J. Roberts, Dayton, O.

E. A. Kinsey, Cincinnati, O.

W. R. Moore, Indianapolis, Ind.

Wm. Ritchie, Hamilton, O.

W. W. Drummond, Louisville, Ky.

J. B. Stanwood, Cleveland, O.

A. J. Sweeney, Wheeling, W. Va.

W. H. Harrison, New York City.

Women's Department.

Jacob Menderson.

Department of Science, Education and Historic Relics.

Miss Christine J. Sullivan. Prof. E. E. White.

Department of Music and Entertainments.Lawrence Maxwell. Wm. M. Hobart.
Peter Rudolph Neff. Harry Rainforth.
B. W. Foley.***Department of Fine Arts and Ceramics.***W. W. Harris, St. Louis, Mo. John Wanamaker, Philadelphia, Pa.
John F. Smith, Philadelphia, Pa. A. E. Burkhardt, Cincinnati, O.
Miss L. M. McLaughlin. Thomas E. Noble.
F. A. Ridgley, St. Louis, Mo. A. E. Edwards.
Leon Van Loo.***Pioneer Department.***

John D. Caldwell. Hon. S. F. Hunt.

Department of Special Displays.

John B. Peaslee.

Department of Textile Fabrics.

Earl W. Stimson, Cincinnati. J. T. Carew, Cincinnati.

Department of Furniture and Household Appliances.

Mrs. C. A. R. Devereaux.

Department of Christian Advancement.George B. Johnson. J. Webb, Jr.
George T. Howser. R. H. Waggener.***Department of Transportation.***W. B. Shattuc, G. P. A., - O. & M. R. R.
John Egan, G. P. & T. A., - C., I., St. L. & C. R. R.
C. H. Rockwell, G. P. A., - C. H. & D. R. R.
S. F. B. Morse, G. P. A., - Kentucky Central R. R.
H. Collbran, G. T. & P. A., - Queen & Crescent Route.
T. D. Rhodes, G. P. A., - O. & N. W. R. R.
P. L. Dudley, G. P. A., - C., Y. & N. R. R.
W. H. King, Ass't G. P. A., - C., W. & B. R. R.
D. I. Roberts, Ass't G. P. A., - P., C. & St. L. R. R.
J. E. Reeves, G. P. A., - C., C., C. & I. R. R.
S. S. Parker, D. P. A., - I. & N. R. R.
H. C. Holabird, D. P. A., - Erie Railway.
Daniel Holmes, City T. & P. A., C. & O. R. R.

RULES FOR THE GOVERNMENT

OF THE

Board of Commissioners of the Centennial Exposition

OF THE OHIO VALLEY AND CENTRAL STATES.

RULE I.

The Board of Commissioners shall consist of an Executive Department and of an Advisory Department. The Executive Department shall consist of the Commissioners appointed by the Cincinnati Chamber of Commerce, the Cincinnati Board of Trade and Transportation, and the Ohio Mechanics' Institute, who shall have the control and care of the Exposition and its properties. The Advisory Board shall consist of the Honorary Commissioners, as may be elected or appointed.

RULE II.

The officers of the Board of Commissioners and of the Exposition shall be a President, First Vice President, Second Vice President, Third Vice President, a Secretary, and a Treasurer.

RULE III.

The President shall be the chief officer and *ex-officio* a member of all Committees and Departments of the Exposition.

He shall appoint all standing Committees and the Department Governors from the Board of Commissioners.

He shall preside at all meetings of the Board, and under the rules perform all duties usually appertaining to his office, and shall sign all orders for money when the rules for the appropriation of the same shall have been fully carried out.

In the absence of the President, a Vice President, in the order of his seniority, shall discharge his duties.

RULE IV.

The Secretary shall keep a record of all proceedings of the Board and have charge of its correspondence and archives. He shall keep account of all assets and liabilities of the Exposition, and submit the same to the Board at the first regular meeting of each month, or oftener if required.

If necessary, he shall recommend the appointment of an Assistant Secretary and clerks, and may suggest the name of same, subject to approval of the Board, and their compensation shall be fixed by it. He shall collect all moneys received for entry fees, exhibitors and employe's tickets, and pay the same to the Treasurer daily. He shall countersign all orders for money when the rules for the appropriation of the same shall have been fully carried out, and such orders have been signed by the President, and he shall, under the rules and orders of the Board, perform all duties usually appertaining to his office.

The Secretary or Assistant Secretary and clerks must be in their offices at such times as may be ordered, and attend to all duties which may be prescribed by the Executive Committee or the Board, and they shall give bond as required by the Board and subject to its approval.

RULE V.

The Treasurer shall receive, disburse and be the custodian of all moneys belonging to the Exposition, and shall keep an account of all receipts and disbursements by him made. He shall pay all orders on him, payment of which have been directed by the Board at a regular meeting and when said orders are signed by the President and countersigned by the Secretary. He shall have charge of all admissions and turnstiles, and may appoint an Assistant Treasurer and other assistants necessary for the business of his office, subject, however, to approval of the Board, who shall fix their compensation.

The Treasurer shall make a monthly report of all receipts and disbursements, and when required by the Board, he shall give bond from time to time, as required by and subject to the approval of the Board.

RULE VI.

COMMITTEES.

SECTION 1. Committees and Departments shall be as follows:

Executive Committee.

Special Committees.—Finance and Auditing; Contracts, Privileges and Legislation; Printing and Advertising; Space and Allotment; Buildings; Transportation and Excursions; Rules, Jurors and Awards.

Departments.—Department of Foreign Exhibits; Department of States; Department of Information; Agriculture and Agricultural Implements; Machinery and Mechanical Appliances; Science, Education and Historical Relics; Music and Entertainments; Horticulture, Floral Display and Decoration; Fine Arts and Ceramics; Textile Fabrics; Women's Department; Children's Department; Furniture and Household Appliances; Tobaccos, Liquors and Provisions; Railway Supplies, Hardware, Minerals and Metals; Architecture and Buildings; Exhibitions and Special Displays.

SECTION 2. *The Executive Committee.*

The President and not less than three Commissioners shall constitute the Executive Committee, and during the Exposition the officer of the day shall be ex-officio a member of this Committee. It shall have general supervision of all matters pertaining to the Exposition. It shall appoint and have charge of the police and janitors, and fix the compensation of the same. When appointments are made it shall report them, together with the amount of compensation, to the Board for approval. All appointments must be approved by this Committee before being reported to the Board. The Committee shall approve of and execute under the instructions of the Board all contracts of every nature in any manner connected with the Exposition. It shall be subject to the call of any one of its members to consider and determine questions of order in and regulations of the Exposition between the meetings of the Board. Whenever it shall disapprove of the recommendation of any other Committee, such disapproval shall be reported to the Board for action. One or more of the members of this Committee must be present in the Exposition building at all times when the Exposition is open to the public. This Committee shall have charge of all special awards made by the Board.

SECTION 3. The Finance Committee shall consist of not less than three members. This Committee shall have supervision of all monetary affairs of the Exposition, including the Guaranty Fund. It shall cause to be printed a list of all bills and accounts against the Exposition, and transmit the same weekly to each member of the Executive Department of the Board; and all bills and accounts shall be suspended and no orders therefor drawn until one week after they have been so printed and submitted. This Committee shall have a weekly meeting at least one day before the regular meeting of the Board, at which it shall examine into the correctness of all claims, and shall report all irregularities and errors in the same, if any, to the Board. All bills must be approved by this Committee and the Chairman of Committees and heads of Departments authorizing the same, before the same shall be printed or recommended for payment by the Committee. No appropriation or

contract involving the expenditure of money, or which may render the Board liable for the same, in excess of twenty-five dollars, shall be made by the Board until the detailed estimates for the same shall have been submitted to this Committee for investigation, who shall report to the Board its approval or disapproval of said appropriation or contract; but in case of emergency the Executive Committee may suspend this paragraph *pro tem*. This section and its several provisions, except as herein provided, can only be suspended at a regular meeting and by unanimous consent of the Executive Department.

SECTION 4. The Committee on Contracts, Privileges and Legislation shall consist of not less than three members. It shall prepare all contracts and have charge of the sale of all privileges, and in conjunction with Space and Allotment Committee, the allotment of space for same; but all contracts and matter of privilege shall be referred to the Executive Committee for approval and execution. It shall have charge of all necessary legislation.

SECTION 5. The Committee on Printing and Advertising shall consist of not less than three members. It shall decide on the forms of stationery and books of the Exposition, and have charge of advertising and printing.

SECTION 6. The Committee on Space and Allotment shall consist of not less than three members. It shall have control of space and allotment of same to departments, and shall work in harmony with Committee on Contracts and Department of Exhibitions and Special Displays, and no award of space for privileges shall be made without concurrence of Committee on Contracts and the Executive Committee.

SECTION 7. The Building Committee shall consist of not less than five members. It shall supervise all changes in the structure of buildings and the erection of new ones, and shall control and manage the light and water supply.

SECTION 8. The Committee on Transportation and Excursions shall have charge of all matters relating to transportation, and shall arrange for special rates and excursions.

SECTION 9. The Committee on Rules, Jurors and Awards shall prepare the rules and regulations for the government of the Board and Exposition. They shall also, in conjunction with the Governors of Departments, formulate rules for the guidance of jurors, the giving of premiums and awards, and the promulgation of premium lists.

DEPARTMENTS.

Each department shall consist of at least three Commissioners. Associate Commissioners may be appointed for any of the same, at the discretion of the Board.

Foreign Exhibits—Shall open correspondence with foreign nations and exhibitors, obtain the best way of advertising in foreign countries, and report same to Committee on Printing. Shall solicit displays from such nations and exhibitors. Shall aid in transportation of exhibits to and from the Exposition, the display of same therein, and generally to have charge of exhibits from foreign nations and exhibitions not assigned to special departments.

States—Shall consist of the Honorary Commissioners of the several States, and not less than one Commissioner from the Executive Department. Each State may constitute a separate section, but shall be under the general charge of the department. This department shall have charge of special exhibits from the several States, supervision of separate State buildings, and generally to advance the interests of their different States at the Exposition, and the interest of the Exposition in their several States.

Information—Shall have special supervision of the wants of strangers visiting the city to attend the Exposition. It shall cause to be canvassed the hotels, restaurants and boarding places of the city, ascertain their capacity, charges, rates, location and reputation. Shall prepare lists of them and report same to Printing Committee to be printed, and after printing shall distribute the same. Shall protect strangers and guests from imposition while in the city; establish and maintain bureaus to aid visitors in securing stopping places, and compile, distribute and impart information relative to the city and Exposition which will be of interest to strangers and add to their comfort and pleasure while in the city.

Agriculture and Agricultural Implements—Shall have charge of all exhibits of agricultural products and implements.

Machinery and Mechanical Appliances—Shall have charge of all machinery and mechanical appliances, except agricultural implements.

Science, Education and Historical Relics—Shall have charge of all scientific and educational exhibits, and especially of curiosities and relics connected with the early settlement of the Ohio Valley, Central States and Northwestern Territory.

Music and Entertainment—Shall have charge of the music for the Exposition and all entertainments.

Horticultural, Floral Displays and Decorations—Shall have charge of horticultural exhibits, together with such floral displays and decorations as the Board may authorize.

Fine Arts and Ceramics—Shall have charge of the art gallery and exhibits of fine arts and ceramics.

Textile Fabrics—Shall have charge of textile goods and manufactured articles pertaining thereto.

Women's Department—Shall have charge of all exhibits, ornamental or practical, made by or for women, and especially needlework and household articles of an ornamental character for use in the home.

Children's Department—Shall have charge of all articles especially designed for the amusement or use of children, or made by them for the use of others, and of entertainments given by and for children.

Furniture and Household Appliances—Shall have charge of all exhibits of furniture, heating and cooking apparatus.

Tobaccos, Liquors and Provisions—Shall have charge of all exhibits of leaf and manufactured tobaccos, liquors, and provisions of all kinds.

Railway Supplies, Hardware, Minerals and Metals—Shall have charge of articles designed for the use of railways, manufactured hardware, minerals, metals and products of mines.

Architecture and Buildings—Shall have charge of architectural exhibits and articles used in the erection of Buildings.

Exhibitions and Special Displays—Shall solicit and arrange for exhibitions, supervise the same, carry out plans for special displays.

Department Governors—Shall inspect their several departments daily, and shall be directly responsible for their cleanliness and order.

RULE VII.

The regular meeting of the Board shall be held weekly at the office of the Exposition, or at such time and place as the Board may order. The President or any three members may call special meetings of the Board by giving notice to its members.

The parliamentary rules of Congress shall govern the proceedings of the Board.

RULE VIII.

The order of business at the regular meetings of the Board shall be as follows:

1. Call of Roll.
2. Reading of Minutes.
3. Report of Secretary.
4. Report of Treasurer.
5. Report of Finance Committee.
6. Reports of Committees and Departments.
7. Reading of Communications.
8. Unfinished Business.
9. New Business.

RULE IX.

Eight members of the Executive Department of the Board shall be a quorum for the transaction of all business, but a less number may adjourn.

RULE X.

No debt or obligation shall be incurred and no contract shall be entered into in excess of twenty-five dollars, until the approval of the Executive Committee of the Board has been first obtained. And all orders of the Commissioners and acts of employes shall be subject to approval of the Board, anything contained herein to the contrary notwithstanding.

RULE XI.

An employe of the Exposition convicted of receiving a bribe, fee or compensation of any kind from exhibitors or others shall be discharged. An exhibitor offering a bribe, fee or compensation to an employe shall be subject to such penalty as the Board may determine. This rule shall be printed and posted in every department of the Exposition.

RULE XII.

No expense shall be incurred or contract made in which any member of the Board shall be pecuniarily interested.

RULE XIII.

All contracts for an amount exceeding \$100 shall be in writing.

RULE XIV.

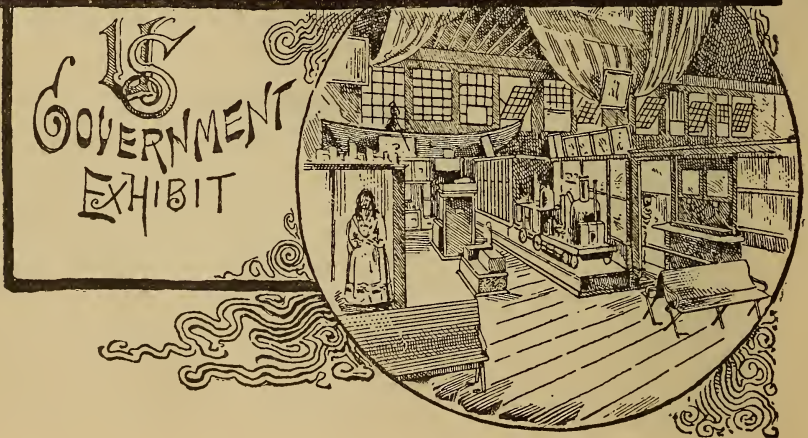
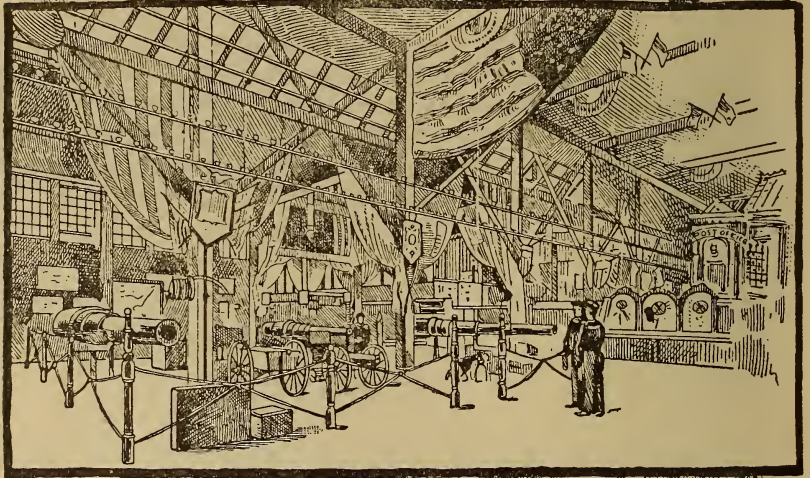
All Commissioners of the Executive Department, except President, Secretary and Treasurer, shall serve as Officer of the Day. At least one month before the opening of the Exposition, the President shall make out and publish, for the entire time of the Exposition, a list of the Officers of the Day from the Executive Department. There shall be two Officers of the Day continually in office. The first Commissioner named shall be First Officer of the Day for the day chosen, and the second Commissioner chosen shall be Second Officer of the Day for the day designated, and First Officer on the succeeding day. The First Officer of the Day shall be, *ex-officio*, a member of the Executive Committee for the day of his appointment. He shall have full control

under the rules of everything connected with the Exposition, and may appoint assistants with consent of Executive Committee. He shall decide all questions that arise during the day, and, in connection with the Second Officer of the Day and other assistants, with the Executive Committee, have general management of the Exposition. Officers of the Day shall continue in office until relieved by their successors. They must report at the Exposition building one hour before closing of Exposition the night before he takes office, and at least one hour before the time of opening on day of office; and must continue on duty until the doors are closed the night of that day. The Second Officer of the Day shall rank next after the First Officer. The First Officer of the Day shall each night report to the Executive Committee any unfinished business, and said Committee shall report same to his successor with instructions.

RULE XV.

These Rules, except Section 3 of Rule VI, can be amended, rescinded, changed or suspended by a vote of a majority of all members of the Executive Department, after a notice of the proposed change, amendment or suspension has been transmitted them by the Secretary in writing; and by a unanimous vote of all the members of said department.





U. S. GOVERNMENT EXHIBIT.

From the east side of the Fountain, passing between the "Model Postoffice" and the elevator, with the Hecker monument in the center, on your right will be seen the exhibit of the—

POSTOFFICE DEPARTMENT.

R. D. S. TYLER, *Representative.*

Consisting of—

- Postoffice, complete working order.
- An envelope, printing and folding machine.
- Library case containing Reports of Postmaster Generals.
- Caps, hats and clothing supplied Mail Handlers of London and Provincial towns of Great Britain.
- Pictures illustrating the Postal System of China.
- Chinese mail sacks, etc.
- Specimens of Blind Reading by Clerks in the Dead Letter Office.
- Case containing articles sent through the mails and which went to the Dead Letter Office.
- Samples of Chinese Postage Stamps.
- Model of the steamer "Lahn," which plies between New York, Southampton and Bremen.
- Collecton (in frames) of Foreign and Domestic Postage Stamps.
- Collection of locks used at different periods in the U. S. Mail Service, beginning with the year 1800.
- Designs of Postal Cards issued since 1873.
- Oil Paintings of Steamships (U. S. Mail Line).
- Photographs of Postoffices and Mail Coaches.
- Group of Pictures of the International Postal Congress, held at Berne, in 1874.
- Picture of the Honorable Don M. Dickinson, Postmaster General of the United States.
- Group of pictures of the Heads of Departments of Postmaster General's office.

The next display, still continuing south, is that of the—

EXHIBIT OF THE DEPARTMENT OF STATE.

HAUGHWOUT HOWE, *Representative.*

The walls of the space allotted to this Department are adorned with numerous relics and curiosities, while the cases are filled with documents and relics of Historical interest. A document which will attract intense interest is the first diplomatic communication of the United States, which was written to the Premier of France by Benjamin Franklin. It is as follows:

PARIS, December 23, 1776.

Sir:—We beg leave to acquaint Your Excellency that we are appointed and fully empowered by the Congress of the United States of America to propose and negotiate a treaty of amity and commerce between France and said States. The just and generous treatment their trading ships have received by a free admission into the ports of the kingdom, with other considerations of respect, has induced the Congress to make this offer first to France. We request an audience of Your Excellency, wherein we may have an opportunity of presenting our credentials, and we flatter ourselves that the propositions we are instructed to make are such as will not be found unacceptable. Your Excellency's most obedient and most humble servants,

B. FRANKLIN,
SILAS DEANE,
ARTHUR LEE.

One may see dozens of royal autographs to State papers of Historical interest and also the autographs of all Sovereigns of Foreign countries now reigning.

In the first case on the west wall one may see the original Treaty with Great Britain, by which the United States of America secured their Independence. The signature of George III. is shown. The Treaty was done at Paris on November 30, 1782. In the same show case is the Treaty of Alliance with France signed by King Louis, February 6, 1778. Other Treaties of rare historical interest may be seen in the center show case, as follows: The original exchange copy Treaty of Amity with Great Britain, signed by George III., November 19, 1794; the original Treaty of Ghent, done at Ghent, December 24, 1814; the original Treaty with the Republic of France, September 30, 1800, the signature of Napoleon Bonaparte, the First Counsel, is shown with that of his ministers, Talleyrand and Maret; the original Treaty of Commerce with the Sultan of Turkey, May 14, 1862; the original Treaty with the Netherlands, May 22, 1800, and a whale's tooth sent as a Treaty by the King of the Fiji Islands. The wax seals securing the pages of these treaties are particularly interesting and the engrav-

ing on the gold and silver boxes which contain the seals are well worth your attention.

The second medal case contains thirty-nine bronze medals voted to various Officers of the Army and Navy in commemoration of their service to the country. A medal voted to General U. S. Grant, General Zachary Taylor, and General Winfield S. Scott, are numbered among the collection. The third medal case contains gold and silver medals presented to the United States Government for its various services. There may here be found the Gold Medal awarded the Department of State for its exhibit at the Cincinnati Exposition, 1884, and the Gold Medal awarded the Department of State for its exhibit at Louisville Exposition, 1884. A Gold Medal to commemorate the first Embassy from Japan, and an impression in wax of the Great Seal of the United States of America.

The fourth medal case contains gold and silver medals awarded the United States by Foreign Governments, and a collection of Japanese paintings. Silver medal, "The President of the United States to Wm. Griffith for rescue of crew of American ship *Pamelia Floor*, 1863." Bronze medal Paris Exposition, 1878. Two silver medals, "Presented by the inhabitants of Sydney, N. S. W., to commemorate the rescue of the passengers of the *Meridian* by the U. S. Barque, *Monmouth*, September 5, 1853." Bronze medal in commemoration of the Centennial Anniversary of the American Independence. Russian silver medal, its history unknown. Silver medal used by the United States in commemorating the rescue of life at sea. Grant bronze medal struck under resolution of Congress on December 17, 1863. Persian gold medal with translation of inscription. Gold medal of Cincinnati Industrial Exhibition of 1884.

The center show case contains all the relics from the Library of the Department in Washington. Several historical treaties may here be seen, and curious articles enumerated as follows:

A Malay creese taken from a pirate in the Straits of Malacca, 1860; sword presented to the United States by King of Siam; buttons from Benjamin Franklin's court dress; portrait of the late King of Siam, Maha Morgkut, a gift from him to the United States; Thomas Jefferson's journal for the year 1773; the ceremonial robe of the King of Samoa; swords presented to the United States by the Japanese Government; box containing the credentials of the Corean Minister; the credentials of the Chinese Minister; the announcement from the Mikado of Japan of the termination of the mission of one of his ministers; the Journal of Congress which was the personal property of George Washington and contains his autograph on the title page, and within its leaves the Ordinance of 1787, relating to the establishment of

the Northwest Territory of which this Centennial Exposition commemorates the event; also, a rare old book, printed in the year 1493 at Nuremburg.

On the center wall space may be seen one of the most reliable portraits of President Cleveland. This is the portrait about which an incident occurred during one of the early days of the Exposition, when one of the citizens of Cincinnati criticised the character and style of the frame which then surrounded this portrait and requested permission to purchase, at his own cost, as handsome a frame as the city of Cincinnati could produce. The gift may now be seen enclosing the President's portrait. To the right and left of the President's portrait may be seen handsome photographs of the Executive Mansion, Washington, the Capitol, the State, War and Navy buildings, the Treasury Department, the Interior Department, the National Museum, and the Smithsonian Institute, all of Washington City. Below the portrait of President Cleveland may be found the portraits of all the Presidents from George Washington to Grover Cleveland, the autographs of all the Presidents appearing below each of their portraits: The flag of the President of the United States is on the wall to the extreme right, adjoining which a collection of United States passports may be seen. On the south wall in the center may be seen a portrait of the Honorable Thomas F. Bayard, Secretary of State; to the right and left of the Secretary Bayard's portrait there are portraits of the Secretaries of State from Thomas Jefferson to date; below is a large photograph showing the recent Fisheries Commission as grouped after the completion of their labors in Washington City. Another interesting feature of the exhibit is a large collection of letters from various Kings, Emperors and Rulers of foreign countries to President Cleveland. Thus the late Emperor William of Germany addressed the President as follows:

WILLIAM BY THE GRACE OF GOD, GERMAN EMPEROR, KING OF
PRUSSIA, ETC., ETC., ETC.,

TO THE PRESIDENT OF THE UNITED STATES OF AMERICA.

GREAT AND GOOD FRIEND:

I hereby inform you that I have seen fit to appoint to another position the Chamberlain and Counselor of Legation von Alvensleben, who, for some time past, has been accredited to the Government of the United States in the capacity of Envoy Extraordinary and Minister Plenipotentiary, and to recall him as I do by this letter, from his present post. Entertaining the hope that Envoy von Alvensleben has succeeded, during his sojourn in the United States, in meriting your approbation, I shall not fail to appoint as his successor, one who will earnestly endeavor to maintain and draw closer our friendly relations with the United States, to which I attach a high value. In the meantime, I gladly avail myself of this occasion to assure you of my very distinguished consideration.

WILLIAM.
COUNT BISMARCK.

BERLIN, January 26, 1888.

Thus in turn the Emperor Frederick III. addresses the President of the United States :

FREDERICK, BY THE GRACE OF GOD GERMAN EMPEROR, KING OF PRUSSIA, ETC., ETC., ETC.,

TO THE PRESIDENT OF THE UNITED STATES OF AMERICA.

GREAT AND GOOD FRIEND :

I hereby inform that it has pleased Divine Providence to call away from this world my dearly beloved and honored father, His Majesty William, German Emperor, King of Prussia, who died on Friday, the 9th inst., at half past eight o'clock A. M. Confidently hoping that you, Mr. President, will feel an interest in this painful event, I notify you, at the same time, that I have now ascended the throne of my ancestors, whereby the German Imperial dignity, which is connected with the crown of Prussia, has been transferred to me. It shall be my earnest endeavor to maintain and strengthen the good understanding between Germany and the United States of America, for whose prosperity and welfare I entertain the best wishes, and I shall avail myself of every opportunity to give you, Mr. President, evidences of my distinguished consideration.

CHARLOTTENBURG, March 15, 1888.

FREDERICK III.

GRAF BISMARCK.

Queen Victoria of Great Britain and Ireland, and Empress of India, announces to the President the birth of a Prince. This announcement is also signed by the Marquis of Salisbury.

Maria Christina, Queen Regent of Spain, announces the birth of Alfonso, who has been proclaimed King of Spain.

The Czar of Russia announces to the President the birth of a Grand Duke.

The Emperor Frances of Austria announces the birth of a Princess.

The King of Siam announces recall of Siamese Minister.

King William of the Netherlands expresses pleasure at Minister Dayton's performance of his diplomatic duties.

Sultan of Muscat congratulates President Cleveland upon his accession to office.

King George of Greece announces birth of a Princess.

Emperor and Empress of Brazil praise Minister Hilliard's discharge of his diplomatic functions.

King Kalakaua of Hawaii, announces death of a Princess.

King Louis of Portugal, announces birth of a Princess.

King Christian of Denmark, announces birth of a Prince.

King Leopold of Belgium, praises the manner in which Minister Dayton performed his diplomatic functions.

President Carnot of the Republic of France, officially announces to the President of the United States his accession to office.

President of the Republic of Argentina thanks President Cleveland for sending Mr. Hanna as Minister.

President Santos of Uruguay, announces his accession to office.

President Caceres of the Republic of Peru, announces his accession to office.

President Bogran of the Republic of Honduras, announces his accession to office.

President Barillas of Guatamala, announces his accession to office.

President Menedez of the Republic of Salvador, announces his accession to office.

President Soto of the Republic of Costa Rica, announces his accession to office.

President Pacheco of the Republic of Bolivia, recalls the Minister Corral.

President Salomon, of Hayti, expresses regret at Minister Langston's recall.

President Balmaceda, of Chili, announces his accession to office.

There will be found within this exhibit eight maps showing the location of the Diplomatic and Consular offices in North America, Central America, South America, Northern Europe, Southern Europe, Eastern Europe, and Asia, Asia and the Pacific and Africa.

The Original Documents accompanying the delivery of the Statue of Liberty are conspicuous treasures. They bear the names and signatures of all the members of the French Chamber of Deputies. A plaster cast of a stone tablet covered with hieroglyphics is a treaty between the Athenians and the Chalcidians, made 445 B. C. A translation accompanies this relic.

The Original Declaration of Independence was placed in the State Department by an Act of Congress, and it can therefore only be removed from that building by an Act of Congress. There, however, has been made a fac-simile copy which gives an exact idea of the original document, as to size, style and signature, and this fac-simile copy is displayed prominently.

A sketch of the first building occupied by the Department of State, at Philadelphia, Pa., 1781, is shown to the right of the Declaration of Independence. On the left of same is a photograph, from a painting, of the signing of the Treaty with Great Britain, done at Paris, November 30th, 1782, whereby the United States obtained acknowledgment of Independence.

Among the other interesting relics and documents upon the walls may be found, a silk flag, in one piece, presented to the United States, by the citizens of Lyons, France, in memory of Abraham Lincoln.

Diploma and Medal awarded the United States at the International Exposition, Berlin, 1880.

Credentials of the Madagascar Envoys, from Queen Ranavalomania, of Madagascar.

Credentials of the Chinese Minister.

Old State Department Building. Space now occupied by Treasury Department.

Chinese Map of the Island of Formosa.

Office of the United States Consulate, Trieste.

The Official Shields of the United States which are placed upon the Buildings occupied by the Legations of the United States abroad, the office of the Counsel General, the Consular Agencies and Commercial Agencies; the Engrossed Resolution from the Borough of Salford, in memory of President Lincoln; Engrossed Resolution from the City of Manchester, England, in memory of President Lincoln.

Photograph of Department of State Exhibit, New Orleans.

Photograph of Department of State Exhibit, Louisville.

Photographs of United States Legations, Tokio and Bangkok; of the Consulates of Canton, Trieste, Fiji, Shanghai and Stuttgart.

The Great Seal of the Province of Carolina.

Photographs of the Statue of Liberty and Washington Monument, the Tomb of John Howard Payne, the author of "Home, Sweet Home," who died in the Consular Service of the United States, at Tunis.

A Blank Commission signed by Henry Laurens, President of the Continental Congress.

On the north wall will be found a library case which contains the publications of the Department of State. The Department of State publishes the United States Laws, the Consular Reports, Foreign Relations, Commercial Relations, Statutes relating to the District of Columbia, Wharton's International Law, Northwest Boundary, Consular Regulations, Diplomatic Correspondence, Cattle Reports, Reports on Expositions, viz: Report on the Vienna Exposition; Centennial Exposition, Philadelphia; Paris Exposition.

A Bomb Souvenir of the Siege and Commune of Paris, March, April and May, 1871, presented to State Department by the Hon. E. B. Washburn, Minister of the United States to France.

A document of great interest to the Citizens of Cincinnati has just been displayed in the Department of State Exhibit. It is the Original of the first letter written to President Cleveland by the present Emperor William II of Germany. It was presented personally to President

Cleveland on August 2d by Count Valley, the German Minister, and below is a copy. This completes the series of the Royal letters from Germany. There is now displayed one from the late Emperor William and another from the recently deceased Emperor Frederick.

WILLIAM, BY THE GRACE OF GOD EMPEROR OF GERMANY, KING
OF PRUSSIA, ETC., ETC.

TO THE PRESIDENT OF THE UNITED STATES OF AMERICA.

GREAT AND GOOD FRIEND:

Having in consequence of the deeply lamented death of my revered father, the Emperor of Germany, King of Prussia, his majesty Frederick, ascended the throne of my ancestors, I will not delay to confirm in his office as Envoy Extraordinary and Minister Plenipotentiary to the United States of America, the Count Arco Valley, appointed in the lifetime of his majesty, my father, sometime deceased, as the accredited Ambassador, and to furnish him with new credentials. I feel assured that you will in the future, freely grant access and audience to the Ambassador Count Arco and accord full credit to everything that he may be ordered to present in my name and in the name of my government. He will also following his instructions, express to you the good wishes which I cherish for the welfare and increasing prosperity of the United States of America. Accept Mr. President on this occasion the assurance of my distinguished consideration.

WILLIAM, F. R.
COUNT BISMARCK.

The next display, still continuing south, is that of the—

EXHIBIT OF THE DEPARTMENT OF JUSTICE.

CECIL CLAY, *Representative.*

The display of this Department adjoins that of the State Department, on the right. The Department of Justice exhibits a set of Charts showing the statistics of business before the United States Courts, for the fiscal years 1883 to 1887, inclusive; a photograph of the public buildings and a list of Court Officers in each judicial district; a handsome collection of portraits, in oil, of the Attorneys General, from the establishment of the Government; statistics of the legal business of the nation, transacted in the Supreme Court and the Court of Claims, and specimens of the various publications of the department.

At the extreme south end of the Government Annex Building is a very rare and very interesting exhibition made by the Treasury Department.

EXHIBIT OF THE TREASURY DEPARTMENT.

HERMAN KRETZ, *Representative.*

This exhibit consists of a gallery of the portraits of all the Ex-Secretaries of the Treasury, painted life size.

EXHIBIT OF THE UNITED STATES COAST AND GEODETIC SURVEY.

DR. JAS. J. CLARK, *in charge.*

GEODECY.

This department is represented by the six-meter compensated base apparatus by which a ten-mile base line may be measured with an uncertainty of half an inch.

A six-meter secondary base apparatus, Beach measures, twenty-inch direction Theodolite, twelve-inch direction Theodolite, ten-inch repeating Theodolite, three-inch Theodolite, Geodesic Level and Rod, Gradiometer, Heliotropes and Night Signal Lamps.

ASTRONOMY.

This department of the Survey is illustrated by a complete outfit, such as is used for the determination of latitude, and telegraphic difference of longitude, and comprises the following instruments: Zenith Telescope, forty-six-inch Transit, Prismatic Transit, Zenith Sector, Artificial Horizon, Chronograph, for noting observations, and the Personal Equation Apparatus. This last instrument was designed by Prof. J. E. Hilgard, late Superintendent of the Survey, and is the first of the kind made. By it the difference between the true time of the occurrence of an event and the time noted by an observer can be determined. This is called his "Personal Equation."

TOPOGRAPHY.

Two Plane Tables of different sizes are shown. The triangulation of an area to be surveyed having been completed so as to furnish points sufficiently close for the topographical survey, they are plotted upon a projection in such a position upon the plane table sheet as to include areas with the best points.

HYDROGRAPHY.

The exhibit consists of a Deep Sea Thermometer, Optical Densimeter, Bliss Taffrail Log, Self-registering Tide Gauge, by which the rise and fall of the tide is recorded on paper, and Pillsbury's Deep Sea Current Meter, by which the direction and velocity of the lower ocean currents are determined.

MAGNETICS.

Four magnetic maps of the United States, showing equal lines of magnetic declination, magnetic inclination, horizontal magnetic intensity and total magnetic intensity. A Magnetometer and Dip Circle are also exhibited.

MODEL OF THE BAY OF NORTH AMERICA.

This model exhibits the outline of the continent, east of the Rocky Mountains, in a very striking manner, showing the depth of the ocean and of the Gulf of Mexico.

PENDULUM.

Two are exhibited, the Peirce and Repsold pendulums, by which the force of gravity is determined. The exact figure of the earth is one of the objects of pendulum observations.

OBSERVING TRIPODS AND SCAFFOLDS.—Three models of these are exhibited.

Two electrotype copper plates from which the charts are printed and a number of prints on plaster are shown.

THE THOMAS ARITHMOMETER.—This is a calculating machine by which long and difficult problems in multiplication and division are performed.

CHARTS AND MAPS.—A complete exhibit of charts and maps issued by the Coast and Geodetic Survey.

PUBLICATIONS.—These consist of a set of volumes of the Annual Reports, volumes of the Coast Pilot, catalogue of charts issued by the Survey, numbering some 600, and a number of "Methods and Results."

WEIGHTS AND MEASURES.—The Superintendent of the Coast and Geodetic Survey has charge of the construction of the standard weights and measures. A complete set of Customary weights and measures and balance are shown, and also a set of Metric weights and measures. A set similar to this is presented to each state in the Union.

By custom, the English weights and measures in use at the time of the Revolution are ordinarily used in the United States for commercial purposes, but for scientific purposes the metric system is almost exclusively used.

VERTICAL COMPARATOR, designed for the comparison of end measures is exhibited, as is also a *Reflecting Comparator*; this latter instrument is

used for the final comparison of standards of length, and by it a difference of a hundred-thousandth of an inch is seen.

BUREAU OF ENGRAVING AND PRINTING.

This is an interesting exhibition of modern work. It consists of three very large frames containing samples of lathe work, engraving on steel, and printing done in Washington.

The frames contain specimens of United States Bonds, from \$1,000 to \$50,000, and currency and gold notes from \$1.00 to \$10,000. There are also shown samples of Internal Revenue Certificates. One of the frames contains vignette portraits, engraved on steel, of 200 of the prominent statesmen and inventors of America.

UNITED STATES LIFE-SAVING SERVICE

LIEUT. C. H. MCCLELLAN, *in charge.*

A graphic exhibition of this interesting branch of the Government Service is made. It consists of all necessary surf, beach, signal and line apparatus used in saving lives from vessels wrecked on the coast; specimens of cannon, for firing projectiles with shot-line attached; a modern life-saving boat, Life Car, Breeches Buoy, Beach Apparatus Wagon, models of different life-saving boats, code of signals, ropes, blocks, life jackets, swimming suits, and all other apparatus used in this great work of humanity is exhibited. To further illustrate the practical work of the Service there are shown oil paintings and black and white sketches.

The cannon used in the Service is of small calibre and is known as the Lyle gun. With this gun a line can be thrown over a vessel in distress at a distance of five hundred yards from the shore. It is used only when the surf is so bad and the sea so rough that the life-boat cannot be used.

The first mortar and ball ever used in the Service is exhibited. On the occasion of its first use two hundred and one lives were saved by its instrumentality.

The life-saving boat, one of which may here be seen, is of modern construction. It is built with air-tight compartments, will right itself in the nastiest sea, if upset, and it is self-bailing.

The exhibit of the War Department is an excellent one. It comprises most of the modern weapons and implements of war, modern machine and magazine guns, models of modern fortifications, specimens of medieval weapons and curious relics and trophies from the battle fields of the Revolution, the war of 1812 and the war of the Rebellion.

EXHIBIT OF THE WAR DEPARTMENT.

CAPT. A. H. RUSSELL, ORDNANCE DEPARTMENT, *Representative.*LIEUT. E. S. BENTON, THIRD ARTILLERY, *Assistant.*

The following Rifles and Cannons, Mounted and Dismounted, are exhibited :

Gun and Carriage captured from British battle of Saratoga, Revolutionary War.

Gribeauval system of Artillery carriages.

New 3.2 inch breech-loading Steel Rifle Field Piece, mounted on Col. Buffington's new steel field gun carriage, and provided with Col. Buffington's new spring brakes. Range $3\frac{1}{2}$ miles. Velocity 1,750 feet per second. Weight of Powder $3\frac{3}{4}$ lbs. Shot 13 lbs.

Krupp breech-loading Steel Field Gun, mounted on wooden carriage, Cal. 3.65. Old medel.

Hotchkiss breech-loading Mountain Rifle, Cal. 1.65 mounted on steel carriage.

Dismounted Brass Field Gun, surrendered at Monterey. War with Mexico, Sept. 23, 1846, showing muzzle struck by shot.

Dismounted Brass Howitzer surrendered at Capitulation of Yorktown, Sept. 19, 1781.

Dismounted Chinese Cannon, breech-loader, dates back to 1312.

Dismounted Bronze Gun, surrendered by convention at Saratoga, Oct. 17, 1777. Revolutionary War.

Dismounted Wall Howitzer ; very old.

Mexican Cannon used at siege of the Alamo, 1836; buried by the Mexicans upon the Evacuation of the place, and found by workmen upon digging a cellar.

Dismounted Breech-loading Gun, found in mud at bottom of Hudson River, Albany, New York, date unknown.

Dismounted Brass Piece; surrendered at Monterey, Sept. 23, 1846.

One 6 Pounder, Brass, dismounted.

Coehorn Mortar, surrendered at convention at Saratoga, Cal. 5.70.

Two Coehorn Mortars, surrendered at convention at Saratoga.

Two Coehorn Mortars, captured at Stony Point.

Bomford & Wade's Experimental Gun.

One Wall Howitzer.

MOUNTED AND DISMOUNTED MACHINE GUNS.

Gardner Machine Gun, improved, mounted on improved carriage.

Confederate Machine Gun, Williams, Cal. 1.5.

Union Repeating Gun, "Coffee Mill Gun."

Breech-loading Volley Gun, 85 barrels—Confederate; Manufactured by British.

Guthrie & Lee's Machine Gun.

Lowell Machine Gun, Cal. 0.45.

Requa Battery Gun.

Gatling Gun, model 1883; Cal. 0.45 inch, mounted on Col. Buffington's new steel hollow axle, shield gun carriage and provided with wooden model of new shield, and the Accles positive feed drum and Bruce feed. This gun will shoot 1088 shots per minute; range 3,600 yards.

Hotchkiss Breech-loading Machine Gun, Cal. 0.65 inch mounted.

MODELS OF GUNS, GUN CARRIAGES, ETC.

Model of Caisson for Gatling Gun, cal. 0.50 inch.

Model of Limber for Gatling Gun, cal. 0.50 inch.

Model of 13-inch Mortar and Bed.

Model of 8-pound Napoleon Gun and carriage with model of howitzer, 1846. Illustrates stock trail system of gun carriage.

Model of 13-inch Mortar with carriage, chassis and set of implements for same.

Model of Sling Cart, carrying a gun.

Model of 12-inch Rifle, gun carriage, chassis and platform.

Model of Sea Coast Gun, depressing Barbette carriages and chassis—De Russy.

Model of Sutcliff's breech-loading gun mechanism.

Model of Swamp Angel Battery used at Morris Island, South Carolina. Loaned by Gen. W. W. H. Davis, Philadelphia.

Model of Gruson turret with guns.

Model of King's depressing gun carriage with chassis and platform.

Model of Block House.

Models of gun turrets and shields. Models of torpedoes. Photographs of explosives.

Models of hospital, wall, common shelter and Sibley tents.

Model of Projectile for 110 ton English B. L. gun, with extension piece, showing increase in size for 150 ton gun. Model of Projectile for 100 ton gun.

Limber for 3.2 inch B. L. Steel Rifle with models of cartridges and projectiles.

Case containing section of an oak which stood inside the Confederate intrenchments near Spottsylvania Court House. It was cut down by musket balls during the attempt to recapture the works previously carried by the 2d Corps, Army of the Potomac, May 12, 1864. The course of the bullets is here shown, and their effect.

Rail of Western & Atlantic R. R., twisted by soldiers on Sherman's march to sea, campaign 1864.

Flag Staff used at Ft. Sumter when it was fired on.

SHOT AND SHELL.

A large collection showing the various experimental shot and shell, and many historically valuable.

First Confederate shot fired at Fort Sumter.

First shot fired from Fort Sumter, and afterward found in quarters of Gen. Beauregard.

Shot, hole through center, confederate.

Shot, winged, confederate.

Shot, wrought iron, confederate; from battle field in Pennsylvania.

Shot, confederate; Fort Fisher.

Shot, pierced with small holes, confederate.

Shot, rope band, confederate.

Shot, 3 rope bands, confederate.

Case shot, confederate.

Shell, fired, confederate.

Shot, copper cup and wooden sabot, confederate.

Shell, composition hard rubber, confederate.

Bag of grape, cut links, confederate; captured.

Various experimental shot. Abbot's, Turbine, Cochran's diagonal with lead bands, Lawson's, Ritner & Days, and many others.

Chain shot and case.

Chain shot, two balls attached.

Chain shot in four parts.

Canister, 24-pounder.

Stand of grape for 12-pounder.

Stand of grape for 24-pounder.

Stand of grape for 12-pounder; quilted.

10-inch mortar shell with handles.

Shells for Hotchkiss B. L. Rifle, cal. 1.65.

Shells for Hotchkiss B. L. Revolving Cannon.

12.25 inch Butler shot.

12-inch B. L. cored shot.

8-inch B. L. cored shot.

5-inch experimental shell.

3.2 inch service shot.

Huginin's, Sawyer's, Armstrong's, M'Intyre's, Dimmick's, Stafford's, Shenkle's shells, etc.

SMALL ARMS, ETC.

There is a very large and valuable collection of old and new rifles, muskets, etc., showing the development of the modern rifle from the first invention. First, the old match lock, then the wheel lock, the flint lock, the percussion lock, and then the metallic cartridge breech-loading rifle. They are of various models and patterns; among them are: The Brandlin Albin, Belgian; Swiss Milbank, Anslar; Werder, Bavarian; Werndl, Austrian; Chassepot, French; Martini-Henry, English; Martini-Henry, Turkish, late model; Austrian, smooth bore; English Tower, model 1861; Womzel, Austrian; Comblain, Lindsay; Dreyse; Prussian Needle; Mauser, German; Holland, Beaumont; Gras Rifle, French; Springfield, Lee, Ballard, Freeman, Roberts, Pierie, Merrill, Remington of all kinds; Spencer repeating shot gun; Chaffee Reece magazine gun; Lee magazine gun; Winchester magazine gun; Hotchkiss magazine gun; Swingle magazine gun; Triplett or Scott magazine gun; Spencer magazine gun; Russell & Livermore magazine gun; and many others of all patterns, including kinds used in the Rebellion and many taken from battle fields, and some used in the Revolutionary War and war with Mexico:

- 67 Revolvers, pistols, etc., miscellaneous, showing progressive stages from old flint lock, percussion locks, etc., to present time. This collection also includes under percussion lock, the Allen & Wheelock, Savage, Pettengill, Colt, Roger & Spencer, Joslyn, Remington, Derringer, Sube, Amberg, Prussian Army, Waters, Haston.
- 1 Board of revolvers, consisting of Starrs, Colts, Joslyns, Worth, Allen, Beals.

CARTRIDGES, FUSES, ETC.

- 1 Set breech-loading tools issued to the Army for reloading cal. 0.45 rifle cartridges.
- 10 Trays specimen cartridges, illustrating progressive stages of the work of manufacture, experimental work, etc., latest foreign cartridge; Caliber 39½.
- 1 Board, 110 specimens of bullets.
- 1 Board, 67 cartridges for small arms.
- Specimens of friction primers, electric primers, and obturating primers, showing progressive stages of the work of manufacture.
- 1 Frankford Arsenal combination fuze.
- 1 Hotchkiss base percussion fuze.
- 4 Boards, specimens of fuze manufacture prior to 1876.

MISCELLANEOUS.

- Rifle taken from Jefferson Davis at the time of his capture.
- 14 Japanese lances.
- 2 Japanese swords, large—(executioner's).
- 1 Sword—1610.
- 1 Sword—Revolution.
- 1 Sword—Ancient.
- 3 Halberds—Ancient.
- 1 Bill—Ancient.
- 1 Fauchard—Ancient.
- 3 Pikes—Ancient.
- 5 Pikes—John Brown.
- 11 Lances—Modern.
- 1 Scimeter.
- 13 Sabers and swords—war relics.
- 1 Sword—East Indian chief.
- 1 Kreeze and sheath—Malay.
- 72 Musketoon bayonets.
- 1 Rack sabers and swords—war relics.
- 1 French Cuirass, pierced by bullet; from battle field of Sedan.
- 1 French Helmet, indented by saber; from battle field of Sedan.
- 1 Suit of Persian armor.
- 1 Board, fourteen saber and sword blades.
- 1 Board, gun locks.
- 1 Board, antique and curious arms.
- 1 Board, models of trowel bayonets and intrenching tools.
- 2 Boards, parts of sabers and swords in various stages of manufacture.
- 20 Boards, bayonets.
- Sharpshooter's badge; marksman's pin and button; British officer's gorget.
- ARCTIC RELICS—Greely flag, last rations, etc.
- Office wagon used by Gen. Geo. H. Thomas in War of the Rebellion.
- LAY FIGURES—Ordnance private, full dress; Cavalry private, full dress; Artillery private, full dress; Ordnance corporal, full dress; Artillery private, undress; Infantry private, great coat; Principal Musician, Infantry; Chief Trumpeter, Artillery; Chief Trumpeter, Cavalry; Artillery private, full dress, war; Cavalry private, full dress, war; Commissary Sergeant; Hospital Steward.
- Instrument for teaching recruits to aim—Belgian.
- Russell Inspecting Mirror for examining bore of rifles.
- A collection of Range Finders, for determining the distance of target.
- Instruments for determining velocity of bullets, with shooting gallery in operation.

Pressure Gauges for determining pressure of powder in guns.
A collection of Telescopic sights.

Gen. Kelton's new devices for United States arms, viz :

1. Detachable Magazine, for increasing the rapidity of spring fire rifle and carbine.
2. Safety Stop Attachment, for 44 caliber Smith & Wesson Revolver.
3. Cartridge Pack by which all the chambers of the revolver may be loaded at one time.
4. Check-rein attachment.
5. Carbine Sling.

The collection includes a display by the Signal Corps, showing the signal flags and torches, the flags used in the International Code, delicate self-recording thermometer, anemometers, wind vanes, etc.

Occupying considerable space in the northern end of the South Annex, and also along the eastern aisle (going north), is seen—

EXHIBIT OF THE NAVY DEPARTMENT.

LIEUT. RICHARD RUSH, U. S. NAVY, *Representative.*
 Ensign A. E. CLEMENTS, U. S. NAVY, }
 Ensign JOHN GIBSON, U. S. NAVY, } *Assistants.*

In this exhibit will be found objects of interest from the Bureau of Ordnance ; from the Bureau of Construction and Repair ; from the Bureau of Navigation, including Hydrographic office, office of Compasses and Naval Observatory ; and from the U. S. Naval Academy as follows :

BUREAU OF ORDNANCE.

Models of the new Steel Breech-loading Rifles are exhibited. The 10 inch Rifle throws a projectile weighing 500 pounds, and uses a charge of 250 pounds of powder, each time the gun is fired. The 8 inch and 5 inch guns are also represented. Specimens of projectiles now used in the U. S. Naval service ; samples of fuses in present use and those now obsolete. A relic gun captured from the Mexicans in the battle of Los Angeles, California, January 16th, 1847 ; a Blunderbus captured during the same War ; a 3 inch Breech-loading Rifle, mounted on field carriage ; a 12 pounder smooth bore Howitzer ; a Gatling gun mounted on a tripod ; small arm rifles of different patterns ; a part of the sternpost of the U. S. S. Kearsage, showing where she was struck by a shell from the Rebel ram Alabama, during the engagement between those vessels in the Harbor of Cherbourg, France, June 19th 1864 ; a model of the 100

pounder Parrott Rifle, with its fittings; a 6 pounder rapid firing gun; a complete Torpedo outfit, and a model of Gen. Berdand's ram and Pen-leum torpedo.

BUREAU OF CONSTRUCTION AND REPAIR.

This bureau is represented by the beautiful models of the U. S. Men-of-War, Baltimore, Newark, Yorktown, Petrel, Chicago and Dolphian.

BUREAU OF NAVIGATION.

This bureau exhibits samples of the different kinds of lights used on board Ship; a full set of day and night signals; flags of all Nations. In addition the offices of this bureau are represented as follows:

Hydrographic Office:—The exhibit embraces a complete collection of the instruments used in a Hydrographic survey, such as plane table, theodolite, sextants, artificial horizon, telemeter, protractor, beam compasses, metre scale, heliostat, sounding machines, leads and lines, patent logs, steel tape, &c. The portable observatory and accompanying instruments which have been used by this office in the telegraphic determination of longitude and have already been set up in 51 different places in Europe, Asia, Africa, and North and South America. The house is in sections and can be put together by two men in one hour. A full method of chart construction is shown, the whole process step-by-step; first, by a series of 10 large photographs showing the different operations of Hydrographic surveying by the officers and men of the U. S. S. "Ranger" on the West Coast of lower California and which represent the different stages of the work.

There are a series of plans and copper plates showing the methods of chart construction from the first plotting of the survey on the rough sheet by the surveyors, to the finished engraved chart as issued to Mariners from the Hydrographic office. There are a score or more of beautifully engraved charts representing the best specimens of the work of the Hydrographic office. There are two charts of special interest, being printed on plaster of paris; they are beautiful specimens of the Engravers art, the smooth white glossy surface of the plaster showing the fine quality of the work to perfection. There are also two large photographs of ice bergs, a large chart of Baffins Bay and the Arctic regions penetrated by Greely and party. A very noticeable feature of the exhibit is the two large plaster casts of the Carribean Sea and Atlantic Ocean, showing the contour of the bottom, as determined by deep sea soundings. All transit Atlantic Cables are shown on the model of the Atlantic Ocean.

In the Meteorological exhibit of the Hydrographic office is seen the "Pilot chart" of the North Atlantic Ocean which presents graphically as

much information as possible of timely interest and value to Mariners. It is issued monthly and contains a meteorological forecast for the current month. One of the special objects of this publication is to keep track of derelict vessels, ice and other obstructions to navigation. There are supplements to this publication which are issued weekly giving the latest information. There are also the meteorological charts of the different Oceans for each month of the year, giving graphically a result of the meteorological observations for each five degrees square. The symbols give the average force and direction of the wind, height of barometer, the number of storms, the amount of fogs, etc., and represent the average results of many thousands of observations. A quantity of blank forms, journals, etc., furnished by the office to ship masters for recording this data is shown; as also bound copies of notices to Mariners, sets of light lists for all parts of the world, portfolios containing complete sets of Maury's wind, current and thermal charts, beautiful to look at and perplexing to the uninitiated, make up in all a most creditable exhibit.

Here can also be seen the wave-quelling oil bags and rockets used for quieting the storm waves of the Ocean.

Office of Compasses.—This office is represented by a full set of compasses; a standard compass showing the methods used for compensating the magnetic deflection of the compass needle due to the magnetism of the iron and steel of the ship; a compass testing machine; a dip circle for measuring the dip of the magnetic needle at any part of the earth's surface; an alidade for taking bearings; and the parts of U. S. Naval compasses.

The Naval Observatory is represented by an outfit for the determination and transmittal of time, as well as for receiving time from Washington, illustrating fully the operation of the observatory time system, transit instrument, chronograph and astronomical clock, with transmitting attachment, relays and repeaters for receiving time signals. Five clocks showing the five standards of time, fitted with correcting attachments by which they are automatically corrected daily at 11 o'clock A. M. [central standard time] by signal from the Naval Observatory at Washington, D. C. A time ball is dropped daily over the Elm Street entrance of the Park Building by the same signal. A gong near the fountains in Park Building and one on the Bridge over the Canal in Machinery Hall strike the time automatically on receipt of the time signal.

There are also on exhibition maps illustrating the distribution of time from the Naval Observatory, and the roads using the various standards of time; photographs and cuts showing the details of the time system used by Naval Observatory; photographs of the sun during the Eclipse of 1885, and the transit of Venus of 1882; a Magnemometer

and dip circle for measurements of the Earth's magnetism; and photographic records of the magnetograph at the observatory showing the force and variation of the earth's magnetism.

In the Park, outside of the building, are three houses containing a complete outfit for astronomical observations, an Equatorial telescope, 5 inch aperture made by Allan Clark; a broken-back transit, 3 inch aperture; and a photograph house with heliostat with 6 inch mirror and lens for photographing the sun. This is the out-fit used by the U. S. transit of Venus Commission in observing the last transit of Venus.

U. S. NAVAL ACADEMY.

There is a full set of books showing the course of instruction at the Naval Academy; and a detailed statement showing what books are used each term, how many hours are devoted to each, and the course of practical instruction, exercises and drills.

FRESH WATER DISTILLING APPARATUS.

There is also shown a Fresh Water Distilling Apparatus by which the salt water of the Ocean can be converted into fresh water for drinking purposes.

Directly opposite the display of the U. S. Navy, are the exhibits of the Department of the Interior and the Department of Agriculture. The Department of the Interior includes the exhibits of the Bureau of Education, the geological survey, and the Patent Office.

EXHIBIT OF THE DEPARTMENT OF THE INTERIOR.

M. GARDNER, *Representative.*
 A. P. BOGUE, *Bureau of Education.*
 F. W. CLARKE, *Geological Survey.*
 T. T. BEAN, *Patent Office.*
 N. L. BOGAN, *Clerk.*

The exhibits of this Department occupy the east front of the Park Building. At the right of the Race street entrance will be found the exhibit of the—

PATENT OFFICE.

Embracing 2500 models of patents, arranged by classes of invention. Among the classes are plows, harvesters, fire arms, ordnance, metal working, brick making, leather working, stoves, electric apparatus, household articles, etc.

The following brief catalogue of the exhibits will be of value to the visitor:

In a case, No. 1, are the valuable, rare and historical models of the original Howe Sewing Machine, Morse Electric Telegraph, the Abraham Lincoln Patent of 1849, Whitney's Cotton Gin, of 1794, and contributed models of miscellaneous inventions. A series of the publications of the Department and its Bureaus are exhibited.

Working Model, Hotchkiss Machine Gun.

Working Model, Original Gatling Gun.

Photo-lithographic copies of Patented Drawings, arranged in classes.

Drawings of Robert Fulton's inventions.

Copies of Growth of Industrial Art.

Oil painting, The Genius of Invention.

The Allegory Genius of Invention.

Photograph of United States Patent Office Building, 1887.

Drawing of United States Patent Office Building, prior to 1836.

Fac-simile photographic reproductions.

Fac-simile Declaration of Independence.

Illustrations of progress of invention, consisting of printing, weaving, land conveyance, harvesting, electricity, etc.

Photographs, Ex-commissioners of Patents.

Photographs, Prominent Inventors.

Photographs, U. S. Government Buildings, at Washington, D. C.

GEOLOGICAL SURVEY.

Cases, Rocks and Minerals from Yellowstone Park.

Cases, Educational Rock Series.

Cases, Specimens of Lava Flow, Lassens Park.

Geological Models, Canyon of the Colorado, Henry Mountains, Plateaus of Utah, New Mexico, Virginia City, United States, etc.

Colored transparencies, Yellowstone Park, Canyon of the Colorado, etc.

Transparencies, Indian scenes, Canyons, Waterfalls, etc.

Photographic scenes, Geological Surveys.

Illustrations, Pictorial Work of the Survey.

Framed maps of surveys.

LAND OFFICE.

Maps and charts of the United States.

Oil Paintings, illustrating, discovery of gold, gold mining, quartz, coal, oil refining, oil wells, etc.

Comparison of carrying facilities.

PENSION OFFICE.

Autographic letters of George Washington, Thos. Jefferson, John Hancock, King Louis of France, Revolutionary Army discharges, etc.

At the left of the Race street entrance will be found the exhibit of the—

BUREAU OF EDUCATION.

It consists of educational series for the blind, drawings and specimens from Japanese schools, specimens of Indian work from Alaska, kindergarten and kitchen garden series, industrial series, polytechnical drawing models, views of Bureau, pictures of Ex-commissioners, pictures of prominent educators, diplomas and awards of Bureau, chromo scenes of Egypt and the Holy Land, models of ancient implements, illustrations of Statistical Division.

INDIAN BUREAU.

Embracing specimens of work of Indian pupils in government schools at Carlisle, Pa., Santee Agency, Neb., and Haskell University, Kansas.

Consisting of wearing apparel, harness, boots and shoes, carpentry, embroidery, cookery, etc. Photographs of scholars, schools and buildings. Specimens of map work, painting, hand writing, etc.

CENSUS BUREAU.

Series of maps and charts illustrating the density of population, mortality, etc., of the United States.

RAIL ROAD BUREAU.

Maps and charts showing the growth of rail road construction in the United States.

Series of photographs of rail road and bridge scenes in the West.

EXHIBIT OF THE DEPARTMENT OF AGRICULTURE.

WILLIAM SAUNDERS, *Representative.*

JOHN F. DARR, *Assistant.*

G. L. SPENCER, *Chemist.*

This Department is represented by exhibits showing the work of its different divisions, as follows:

STATISTICAL DIVISION.

Maps and charts of the United States, showing the distribution of wheat, corn, oats, cotton, tobacco, effect of varying product or price of corn, the product and export of corn, progress of cereal production, product and export of cotton from 1841 to 1887, produce per capita, of

cereals, increase of farm area in thirty years, export of hog products, the average wages of farm labor.

POMOLOGICAL DIVISION.

Colored drawings of fruits grown in the United States and England.

DIVISION OF CHEMISTRY.

The exhibit of this division consists of a laboratory fully equipped for practical work in Agricultural Chemistry. It is especially well supplied with apparatus for sugar analyses and for the examination of foods for adulteration.

ENTOMOLOGICAL DIVISION.

An assortment of bee hives, honey extractors, and everything connected with bee culture; an exhibit of sprays, pumps, blowers, extension rods, etc. The Serrell Automatic Silk Reel, in operation, reeling the silk from cocoons; also an exhibit of cocoons, showing the different races; raw silk; process of making sewing silk as carried on by Belding Bros. & Co., New York; models of silk worm rearing tables; cells for egg laying; transfer drawer used in transporting silk worms; Darvil cocooning ladder, as filled by the worms in making their cocoons.

ANIMAL INDUSTRY.

Specimens, in alcohol, showing animal diseases, such as pleuro-pneumonia, hog cholera, swine plague, parasitic diseases, etc. Instruments for spading cattle; photographs of noted horses, cattle and dogs; leathers used in book-binding; glass apparatus for the cultivation of Bacteria under various conditions; steam sterilizer for destroying bacteria in culture media; incubator for the growth of diseased germs at blood temperature; apparatus for keeping gelatine hot while filtering; maps showing pleuro-pneumonia in the United States, and its origin; map showing pleuro-pneumonia in Great Britain, France and Germany; chart showing hog cholera bacilli; chart showing bacillus of glanders.

MYCOLOGICAL DIVISION.

Specimens of leaves and plants infected with fungus diseases; fungicide and material used in their preparation.

FORESTRY DIVISION.

Photographs showing the effects of deforestation; methods of securing mountain torrents and reforestation in France; one hundred sections of economically important forest trees of the United States;

seeds of one hundred economically important forest trees of the United States; charts showing the farmers' interest in forest property; map showing the position of the forest, prairie and treeless regions of North America; map of the Rocky Mountain region, showing the approximate location and extent of forest areas and irrigation ditches in 1885; photographs showing the success of tree planting on the streets of Washington.

BOTANICAL DIVISION.

200 varieties of grasses, with name and locality in which they grow attached to each variety.

DIVISION OF ORNITHOLOGY.

A collection of hawks, owls and other birds; a statement of the food, the portion of the country they inhabit, and the contents of a number of stomachs that have been examined, is made on a card and arranged under species.

MICROSCOPICAL DIVISION.

Series of plates of fungi growths: photographs of crystals, of fats, etc.

After the exhibit of the Department of Agriculture, the visitor will be attracted by the magnificent display of the Smithsonian Institution.

EXHIBIT OF THE SMITHSONIAN INSTITUTION

INCLUDING THE

UNITED STATES NATIONAL MUSEUM.

G. BROWN GOODE, *Representative.*

R. EDWARD EARLL, *Deputy Representative.*

JAMES S. MORRILL, *Secretary.*

The exhibits of this department, which occupy the greater part of the Northern Annex of the Park Building, were prepared under the general direction of Professor Goode, assisted by the curators of the National Museum. The display is peculiarly varied, many of the leading departments of the Museum being represented. The collections are educational in their character, and have been installed in such a manner as to bring out forcibly the lessons which they are intended to teach. Each specimen, or series of specimens, is accompanied by a written or

printed label, giving detailed information regarding same. Beginning on the left of the main aisle, at the end adjoining the Department of Agriculture, we find the—

SECTION OF PRE-HISTORIC ANTHROPOLOGY

With its rich collections of crude and polished stone and bronze implements, telling plainly the story of man's progress from a lower to a higher civilization. It contains six cases divided longitudinally to show separately the advance made by man in each of the principal countries of the world. Great Britain is placed at the top, and beneath, in the order named, are France and Belgium, Italy, Switzerland, the Scandinavian countries, Asia, Africa, Oceanica, and at the bottom, the United States. The cases are also divided perpendicularly, that is across the stream of time, to show the various epochs of human civilization during the pre-historic ages. In addition to the stone and bronze implements may be seen a model of a Swiss lake dwelling; a skeleton of a cave bear, man's greatest enemy during the period when he lived in caves; and maps, showing the distribution of populations in pre-historic times. At the entrance to this alcove are several cases of crude stone, ivory, bone and metal implements; the methods of fastening them to handles being especially worthy of note.

Adjoining this exhibit on the right is the—

SECTION OF ETHNOLOGY.

The central idea of this section is man; and in the center of the space is a case showing the chemical constituents of the human body. It shows the exact quantity of each of the various solids, liquids and gases in a man of 154 pounds weight. On the opposite side of the same case is a series showing the daily income and expenditure of the human body; also a day's rations, based upon the average quantity issued to the armies of the world; and a series showing the chemical constituents of a loaf of bread. On the wall to the right may be found a diagram showing the classification of mankind into races, and colored maps showing race distribution over the earth's surface. In the rear are a series of casts of heads of the various semi-civilized people of the old world; also figures showing the characteristic costumes of the various nationalities, including Chinese, Arab, Eskimo, and Indians of various tribes. Also colored photographs giving profile and front views of prominent members of each of the more important tribes of North American Indians. The life and habits of these Indians are shown in adjoining cases by specimens of their implements and utensils, including bows and arrows, war clubs, tomahawks, scalps, pipes, marks, weaving and gambling implements, dolls, games, painter's tools, etc. There is also an exhibit of

crude lamps, from various countries, including the fire-fly lamp, of the West Indies; the candle fish, of British Columbia, fire-sticks, from Alaska and other localities; pioneer and modern tinder boxes, a large series of primitive oil lamps, Eskimo stone lamps, tallow dips, etc.

The alcove described above, includes the exhibit of the—

SECTION OF BIBLICAL ARCHÆOLOGY.

This section illustrates the life and history of the people within a radius of one thousand miles of Jerusalem. It contains a series of oriental costumes, Persian and Chaldean seals, a brick from the tomb of one of the early Pharaohs, a modern Egyptian brick, pomegranates, plants, seeds, shells and lamps from Bible lands; fragments of the famous Egyptian Book of the Dead, and plaster casts of several of the most noted obelisks, stones and tablets containing historical inscriptions relating to Bible times. Among these are the Black Obelisk of Shalmanezar II, the famous Rosetta stone, the Moabite stone, and the Siloam Inscription. Photographs of the mummy of Rameses II (the Pharaoh of the Oppression) and of numerous other objects, including various mummies and mummy cases, Joseph's well, the Egyptian pyramids, and cylinders containing Assyrian historical inscriptions, are also exhibited.

Continuing to the right we come to the—

SECTION OF TRANSPORTATION.

It begins with a human being carrying its own burden; in the pack-mule the load is transferred to the animal, and in the treveau it is divided between the animal and the ground; next, as in the reindeer-sled, the Eskimo dog-sled and the wagon, it is transferred to a separate vehicle and the animal merely draws it. The second case is devoted to the methods of transportation as employed by the early settlers of Ohio. It includes models and pictures of the old style stage coach, conestoga wagon, current ferry-boat, river flat or pole boat, passenger canal boat, and the steamer Orleans, which was the first steam vessel on the Ohio river. The next case shows the methods of transportation in foreign countries, including Peru, Chili and China, and accessories to transportation such as snow-shoes, an elephant harness, saddle and goad, and horse saddles from Siam and Japan. At the end of the alcove are shown pictures and specifications relating to the beginning of steam-boat transportation. The rear case on the opposite side is devoted to the development of the railroad passenger coach, and the adjoining one to the development of the locomotive, including the horse locomotive or tread mill and the sail car of the B. & O. railroad, as well as many of the earliest forms of steam locomotives. In the center of the alcove is a series illustrating the evolution of the rail, and a map showing by decades the progress of railroad construction in the United States.

Next to the right is the—

SECTION OF MAMMALS.

This exhibit is installed in a case 140 feet long, in which is shown either by skeleton, drawing or stuffed animal, every family of mammals known to science, beginning with the highest order, man, and following down through the scale to the lowest, or egg-laying mammal. In this series are shown some very interesting forms, including the gorilla, various species of monkeys, the carnivorous animals, seals, tapirs, zebras, African antelopes, deers, rhinoceros, elephants, bats, rhodents, ant-eaters, armadillos, wombats, kangaroos and duck-bills. Suspended from the roof over the center of the main aisle, is a skeleton of a Fin-back whale measuring forty-five feet in length.

Adjoining the systematic mammal exhibit is a special mammal exhibit known as the—

EXTERMINATION SERIES.

In this exhibit is shown specimens of all of the larger mammals which are rapidly disappearing from the country. It includes the bison, antelope, elk, moose, mountain goat, mountain sheep and the seal. The bison or American buffalo is the object of special attention, and the methods employed in its destruction are fully shown in a series of pictures. Several grades of buffalo hides are exhibited, and a map shows by colored areas the narrowing range of this animal from time to time. In the rear is a case of pelts of the mountain goat and a complete collection of the various kinds of guns used in the slaughter of animals.

Next, to the right, is the—

SECTION OF BIRDS.

It includes six cases containing a small but very complete collection, in which every genus of North American bird is represented; also carefully selected collections of the characteristic birds of the Australian region, the Indo-Malayan region, the Ethiopian region; the principal birds of Europe, and the birds of literature. Also a series of birds' eggs, from that of the giant ostrich of Madagascar, with a capacity of two gallons, to the egg of the humming bird. Among the prominent forms noted in this collection are, birds of paradise, the lyre bird, the kiyi or wingless bird of New Zealand, with numerous species of parrots, pheasants and game birds; also a large collection of the prominent North American water birds, mounted with natural surroundings.

Adjoining this exhibit is the—

SECTION OF INSECTS.

Consisting of three cases showing, by figures or specimens, every family of insects known to science, each family being accurately defined by

descriptive labels, and represented by numerous species. In this series are shown certainly attractive forms, including centipedes, scorpions, tarantulas, highly colored beetles, butter-flies and grass-hoppers. Also, an economic series showing the insects injurious to vegetation, including those that feed upon the various grains, the apple, the cotton plant and the grape vine, and those destructive to forests, with specimens showing the effect of their work upon trunk, bark and branches.

Crossing the main aisle and passing for the moment the collection of boats we come to the—

SECTION OF MARINE INVERTEBRATES.

This department includes many of the deep-sea forms, such as jelly-fishes, corals, sponges, star-fishes, crinoids, and echinoderms; the more delicate species being represented by glass models. Also, an extensive collection showing the typical families of mollusks.

Continuing to the right we reach the—

SECTION OF BOTANY

Where we find a collection of colored pictures of the ferns and flowering plants of the United States, and behind them a collection of marine algae.

A few feet to the left is the—

SECTION OF MINERALOGY

Consisting of a carefully selected series of the gems and ornamental stones of North America. This collection contains many choice specimens of agate, agatized wood, opal, topaz sapphire, beryl, tourmaline, obsidian, turquoise, jade malachite, labradorite, quartz crystals, etc.

Returning to the exhibit of boats known as the—

SECTION OF NAVAL ARCHITECTURE

We find represented either by models or pictures many of the principal vessels of the world. Among them are the Viking ship dating back to the year 800 A. D., Columbus ship in which he sailed on his errand of discovery, the Carrack of the 16th century, the Spanish Galleon of the 16th and 17th centuries, the "Sally Constant"—the "Mayflower" of the Virginia Colony, the "Mayflower" of 1620, the kyack or skin boat of the Greenland Eskimo, and numerous modern sail and steam vessels, including the U. S. Frigate "Cumberland" sunk in battle at Hampton Roads, Va., by the Ram "Merrimac."

Passing through a narrow opening in the rear of this exhibit we enter the—

SECTION OF GRAPHIC ARTS

Containing a large collection of prints, illustrating the various methods of engraving, for pictorial purposes, and the History of Wood-engraving and Etching, in the United States.

PART I.—Processes of Engraving in use from the 16th to the 19th Century, exclusive of modern photo-mechanical processes.

1. Engraving in Relief. (Wood-engraving.) Nos. 1-26; frames 1-4.
2. Intaglio Engraving. (Line Engraving.) Nos. 27-49; frames 5-12, and screens 1 and 2.
3. Etching. Nos. 50-103; frames 13-20, and screen 3.
4. Mezzotint. Nos. 104-117; frames 21-24, and extra frame.
5. Dry Point. Nos. 118-121; frame 25.
6. Aquatint. Nos. 122-126; frame 26.
7. Imitation of Crayon Drawing. Nos. 127-130; frame 27.
8. Stipple. Nos. 131-132; frame 28.
9. Lithography. Nos. 133-158; frames 29-32 and screen 4.
10. Soft Ground Etching. Nos. 159-160; frame 33.
11. The Sand Manner. Nos. 161-162; frame 33.
12. Etching on Glass, so-called. Nos. 163-164; frame 33.
13. Machine Engraving. Nos. 165-168; frame 34.
14. Galvanography. Nos. 169-171; frame 34.
15. Hyalography. No. 172; frame 35.
16. Stylography. No. 173; frame 35.
17. Chemotypy. Nos. 174-175; frame 35.
18. Kerography. Nos. 176-177; frame 35.
19. The Wase Process. Nos. 178-179; frame 35.
20. Graphotype. No. 180; frame 35.
21. Chalk Surface Processes. No. 181; frame 35.
22. Mineralography. Nos. 182-184; frame 36.
23. Mineralotypy. No. 185; frame 36.
24. Nature Printing. Nos. 186-189; frame 36.

PART II.—Wood-engraving in the United States. Nos. 190-429; frames 37-72 and screens 5 and 6.

PART III.—Etching in the United States. Nos. 440-668; frames 73-108 and screens 7-10.

PART IV.—Modern Photo-mechanical Processes.

1. Relief Processes. Nos. 668-793; frames 109-120 and screen 11.
2. Photo-lithography and Fircography. Nos. 794-841; frames 121-126.

3. Callographic Processes. Nos. 842-894; frames 127-132 and screen 12.
4. Intaglio Processes. Nos. 895-968; frames 133-143 and screen 13.
5. The Woodburytype. Nos. 969-981; frame 144.

Leaving the section of Graphic Arts and crossing the aisle leading to the Interior Department we enter the—

SECTION OF PHOTOGRAPHY.

We find here a limited amount of apparatus and a small frame of Daguerrotypes reminding us of the photography of the past; but the collection as a whole is intended to show the present advanced condition of the science, and the various uses of photography in the arts and sciences. In the larger glass cases in the back part of the space are shown modern cameras of the most improved pattern including field cameras, portrait cameras and enlarging cameras. The front table case contains a Kodak camera with one hundred negatives and a sample print, followed, in this and an adjoining wall case, by a series of bromide enlargements from a two inch Kodak negative to a picture over two feet in diameter. The next two cases contain series illustrating the use of photography in map-making, and in crayon, oil, and other portrait work. Suspended from the ceiling is a picture of Notre Dame and one of the U. S. Treasury, both by the Whey process. These measure over seven feet in length and are among the largest photographs ever made. In different portions of the space are series of 30 x 40 inch photographs showing the use to which photography is put by the several Departments of the Government, and samples of the work of Amateur Photographic Clubs. In the collection may be seen photographs of Torpedo Experimental work, the explosion at Hell Gate, photographs of the heavens including certain nebulæ and nebular spectra also interesting samples of photo-micrography, photographs from the "Rogues Gallery," etc.

Continuing to the right, we reach the last of the many sections of the Smithsonian display, namely, the—

SPECIAL EXHIBIT OF THE BUREAU OF ETHNOLOGY.

This Bureau is under the direction of Major J. W. Powell, and its exhibit is devoted largely to illustrating the methods employed by said Bureau in studying the Zuni and the Moki Indians and the Mound-builders. We find here a case containing plaster models from life of six of the prominent members of the Zuni tribe, modeled by Clark Mills. These are dressed in their characteristic costumes. There are also several large and accurate scale models, and a large series of photographic transparencies of the pueblos or dwellings of both the Zunis

and Mokis; models and photographs of ruins of their ancient pueblos, both in Arizona and New Mexico; samples of their pottery, basketing, weaving, embroidery and implements. There are also models of several interesting Indian mounds, including the Great Elephant Mound of Grant County, Wisconsin; Ancient Earth Works, Union County, Illinois; the Large and Small Etowah Mounds near Cartersville, Bartow County, Georgia; with samples of the pottery and other articles taken from them. Also scale models of the ruins of cliff dwellings from Arizona and Colorado.

The noise of water rumbling merrily over a picturesque fall at the extreme north end of the Government Annex building, will attract the visitor to the novel and interesting exhibit made by the U. S. Fish Commissioners.

UNITED STATES FISH COMMISSION.

(SYNOPSIS OF EXHIBITS.)

CAPT. J. W. COLLINS,

Representative United States Fish Commission, in charge of exhibit.

DR. T. H. BEAN,

Deputy Representative United States Fish Commission.

DIVISION OF FISHERIES.

A. OBJECTS OF THE FISHERIES.—

Fish :—Living specimens. Casts. Color sketches.

Maps showing distribution of Halibut, Gadidæ, Mackerel and Bait species.

Cetaceans :—Casts; Pictures.

Mollusks :—Dried shells; Map of bait species.

B. FISHERY APPARATUS.—

Vessels :—Models of Ketches, Schooners, Steamers; Pictures.

Boats :—Models; Pictures.

Canoes :—Bark; Skin; Dugouts.

Rafts :—Balsa.

Nets.

Charts of Fishing Grounds.

C. ILLUSTRATIONS OF FISHERIES.—

Fishermen.

Homes of fishermen and fishery capitalists.

Fishing Towns.

Special Fisheries:—

1. Mammals: Seal; Blackfish; Beluga; Porpoise; Whale.
2. Reptiles: Terrapin.
3. Fishes: Flounder; Halibut; Cod; Haddock; Mackerel; Blue Fish; Salmon; Shad; Herring; Menhaden; Dog Fish.
 1. Market:—2. Ice Fishing, L. Michigan.
4. Mollusks: Oysters; Clams.
5. Crustaceans: Lobsters; Crabs.
6. Sponges

D. FISHERY STATISTICS.

DIVISION OF FISH CULTURE.

A. TRANSPORTATION APPARATUS.—

I. Apparatus for collecting and carrying eggs:—

- a. Models and specimens:—Wroten Bucket. Wroten Bucket, modified form. Hamlin's Can. Collins' Can. MacDonald's Egg-reel. MacDonald's Crate. MacDonald's Crate for egg-reels. Atkins' Egg Box. Green's Egg Box. Annin's Egg Box. Von dem Borne's Egg Box. Clark's Egg Case. Taylor's Egg Transportation Can.
- b. Illustrations: Steam Launch, Albemarle Sound, 15x19. Steam Launch, Avoca, N. C.

II. Apparatus for transporting fry:—

- a. Models and full size apparatus:

Models:—Car No. 2. Rogers' Transportation Can. Clarke's Transportation Can. Stone's Transportation Can.

Specimens:—Stone's Transportation Can, modified. Stone's Transportation Can, modified. Automatic transportation can, four styles. Mulertt's Transportation Can. Mulertt's Trans-Atlantic Can. McDonald's Trout Can. Zolinsky's Carboy. Mortimer's sole aquarium. Carp transportation pail. Carp transportation pail-crate. Carp transportation kettle. Wood bound can, half-size. Wood bound can, full-size. Messengers' complete outfit.

Accessories:—Siphon Strainer, Monroe Green's Aerator and cooler. Carp transportation net.
- b. Illustrations (photographs): Steam Launch, Albemarle Sound, 1877. Loading young shad on launch. Shipping carp. Shipping young fish. Depositing young fish. Carrying cans to carp ponds, etc., etc.

III. Apparatus for carrying spawning-fish.—

- a.* Specimens:—Maitland's Salmon Car.
- b.* Illustrations (photographs):—Live-car for Maine salmon.

B. HATCHING APPARATUS.—*I. Models and Specimens:*—

- a.* For floating eggs: Chester's Cod Box. McDonald's Cod Box. McDonald's Mackerel Tubs. McDonald's Grampus Bucket.
- b.* For semi-buoyant eggs:
 - 1. Utilizing river currents:—Green's Shad Box (model). Brackett's Shad Box.
 - 2. Utilizing wave action:—Wright's submerged box.
 - 3. Requiring head or hydrant pressure:—Bell-Mather Shad Cone. Ferguson's Improved Cone and Model. McDonald's Y-shaped Box. McDonald's Jar, old style. McDonald's Jar, improved. Chase's White-fish Jar. Clark's White-fish Jar. Apparatus used on car.
 - 4. Mechanical Apparatus:—Ferguson's submerged bucket. Ferguson's submerged bucket (working model).
- c.* For Heavy Eggs:
 - 1. Using horizontal current:—Garlick's Hatching Box. Coste's Hatching Grill. Wire-cloth Tray System. Stone's Parlor Trough.
 - 2. Using upward current:—Holton's Hatching Box. Holton's Hatching Box, model.

II. Illustrations (photographs):—

- a.* For semi-buoyant eggs:
 - 1. Requiring hydrant pressure:—McDonald's Jars and Receivers.

III. Accessories:—

Spawning Pans. Ainsworth's Spawning Race. Mather's Spawning Cone. Page's Funnel for eggs. Page's Egg Scale. Nets for eggs. Nippers for eggs. Dippers. Rubber Boots. Oil Clothing.

C. HATCHING AND REARING ESTABLISHMENTS.—*I. List of U. S. Fish Commission Hatching Stations.**II. Models of Hatching Establishments:*—

- a.* Hatching Houses—Northville Hatchery.
- b.* Hatching Steamers—U. S. F. C. Steamer "Fish Hawk."

III. *Illustrations of Hatching Establishments.*

- a. Fixed Hatcheries:—Salmon, Bucksport, Maine. Salmon, Baird, Cal. Salmonidæ, Northville, Mich. Carp Ponds, Washington, D. C. Marine animals, Woods Holl.
- b. Floating Hatcheries:—Hatching Barge. Hatching Barge, interior, 1877.

D. METHODS OF FISH CULTURE.—

I. *Model*:—

- a. Lay Figure—Taking Salmon Eggs.

II. *Illustrations.*

- a. Examining spawning salmon, California.
- b. Spawning salmon, Bucksport.
- c. Tagging salmon, Bucksport.
- d. Taking shad eggs, North Carolina.

E. PROTECTION OF FISH.—

I. *Assistance in ascending streams*:—

- a. Fish-ways.

1. Models:

Counter current Fishways:—McDonald's Fishway, working model. McDonald's Fishway, working model. McDonald's Fishway, working model, latest form.

Deflected current Fishways:—Smith's inclined plane return Fishway. Holyoke Fishway.

Brewer's single groove. Brewer's double groove.

2. Illustrations.

Photographs:—McDonald's Fishway, Fredericksburg, Va.

DIVISION OF SCIENTIFIC INQUIRY.

A. LABORATORIES FOR MARINE EXPLORATION:—

I. *Illustrations of Zoological Stations*:—

- a. Laboratory of U. S. Fish Commission, 1875.
- b. Headquarters of U. S. Fish Commission, 1888.

B. EXPLORING VESSELS:—

I. *Models of Vessels*:—

- a. U. S. Fish Commission steamer "Albatross."
- b. U. S. Fish Commission steamer "Fish Hawk."
- c. U. S. Fish Commission schooner "Grampus."

II. Illustrations of Vessels :—

- a. U. S. Fish Commission steamer "Albatross."
- b. U. S. Fish Commission steamer "Fish Hawk."
- c. U. S. Fish Commission schooner "Grampus."
- d. U. S. Fish Commission sloop used in 1875.

C. COLLECTING APPARATUS:—

I. Nets :—

- a. Beam trawl, with wings.
- b. Surface towing nets.

II. Dredges :—

- a. Blake's dredge.
- b. Rake dredge.
- c. Benedict's dredge.

III. Tangles :—

- a. Wheel tangles.

D. ACCESSORIES FOR DREDGING AND TRAWLING :—

I. Dredge Rope :—

- a. Steel wire dredge rope.

E. APPARATUS FOR ASSORTING COLLECTIONS :—

I. Sieves :—

- a. Rocker sieves.
- b. Table sieves.
- c. Hand sieves.

F. APPARATUS FOR DEEP SEA SOUNDING :—

I. Sounding Machine :—

- a. Tanner Sounding Machine.

II. Sounding Rod :—

- a. Belknap Sounding Rod.

G. APPARATUS FOR PHYSICAL OBSERVATIONS, ETC.:—

I. Thermometers :—

- a. Negretti-Zambra deep sea thermometer.

II. Thermometer Attachment :—

- a. Baillie-Tanner Thermometer Attachment.

H. RESULTS OF EXPLORATIONS:—

I. Charts:—

- a.* Atlantic coast of United States—Halifax to New York.
- b.* River and Gulf of St. Lawrence, New Foundland, Nova Scotia, and adjacent banks.
- c.* River and Gulf of St. Lawrence, New Foundland, Nova Scotia, and banks adjacent.

II. Models:—

- a.* Relief Model of the ocean bed from New Foundland to New York.

III. Collections:—

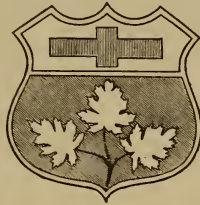
- a.* Marine Animals in alcohol.
 - 1. Deep-sea Animals:—Crinoids. Corals. Crabs. Sea Pens. Star Fish. Sea Urchins.
 - 2. Surface Animals:—Sea Fleas, etc., forming the food of fishes.
- b.* Marine Animals dry :
 - 1. Foraminifera.
- c.* Microscopical Slides :
 - 1. Of Fish Eggs.
 - 2. Embryology of Fishes.
 - 3. Of Fish Food.
 - 4. Of Foraminifera.

IV. Publications:—

A case containing many of the Reports and other published works of the U. S. Fish Commission from 1872 to 1888.

- 1. Reports:—A complete series from 1871 to 1885.
- 2. Bulletins:—Volumes I to VI, 1881 to 1886.
- 3. Fishery Industries of the United States:—Sections I to V, in seven volumes.

ONTARIO MINERAL EXHIBIT.



Ontario, the chief of the provinces forming the Dominion of Canada, our northern neighbor, is first of all an agricultural country, and one of the finest in the world—the timber and mineral interests, though very important, occupying only subordinate places. The government of Ontario, however, when accepting the invitation to participate in our Centennial Exposition wisely concluded to take advantage of the occasion for the purpose of showing outsiders some of the results achieved by the innumerable public and private mining explorations that have been carried on during some years in several portions of the province. It is not too much to say that the exhibit made has proved quite as much a matter of astonishment to the average Canadian as of wonder to Americans generally.

Here, we have rich ores of nearly all the economic minerals in common use, and not a few of those that are comparatively rare.

Iron of first-class quality is shown by Wylie & Co., Carleton Place; Kingston and Pembroke Mining Co., Kingston; Hart and Paget, Perth; T. D. Ledyard, Toronto; Wm. Coe, Madoc; Wallbridge, Belleville; T. P. Pearce, Belleville; Donaldson and Shannon, Mississippi; Calabogie Mining Co., Perth; Allison and Platt, Adolphustown; Wm. Jenkins, Madoc; R. C. Clute, Belleville; McKellar Bros., Ft. William; W. C. Caldwell, Lanark; and Thos. Frood, Sudbury.

The Ontario Mineral Commission reported recently of the Atic-oka Mine, N. S. of Lake Superior, that the vein is from 100 to 150 feet in width, is fully a mile in length, and yields by analysis from 63 to 70 per cent. of the best Bessemer steel ore known to exist in the world, it being almost wholly free from deleterious ingredients.

The specimens of copper ore are among the finest that can be produced. Some of them are of almost perfect purity. They are mainly from the mines of the Canadian Copper Co., Sudbury; the Bruce Min-

ing Co.; P. McKellar, Ft. William; R. C. Sharratt, Perth; Drury Mine, Nipissing; Waquekobing; J. McIntyre, Ft. William; Thos. Frood, Sudbury; and those of the Hon. C. A. Ray of Rochester, N. Y.

Gold ores shown, give by analysis, from \$15 to \$5,000 per ton. These are exhibited by McKellar Bros.; Geo. and Jos. Hope, Marmora; Stevens, Newberry and Rothwell, Detroit; J. McIntyre; Jacob Hennesy, Sultana Mine; Keewatin Mining Co.; Winnipeg Consolidated, Lake of the Woods; A. Matheson, Rat Portage; O. Donnais, Pt. Arthur; R. Bunting, Woodchuck Mine; and Wm. Gibbons, Boulder Island, Lake of the Woods.

Telluroids of gold and silver, a rare combination, are shown from the Huronian Mine, Thunder Bay. These yield upwards of \$5,000 per ton.

The exhibit of silver has never been surpassed at any Exposition. Thunder Bay District is especially prominent in this line; many millions of dollars' worth of the precious metal have been extracted from the ores of this region. The Beaver Mine alone yielded \$300,000 last year—the ores on exhibition being worth from \$5.00 to \$20,000 per ton, some of them being almost pure. Other exhibits from celebrated mines are those of the Badger, Silver Mountain, Silver Islet, 3 A., Rabbit Mountain, Thunder Bay and Duncan Mines.

Many of those who exhibit gold show silver yielding from \$10 to \$2,000 per ton. Other exhibitors are Messrs. T. Woodside, Pt. Arthur; A. L. Russell, Pt. Arthur; A. Gill, Pt. Arthur; J. A. Saucier, Pt. Arthur; Jacob Beck, Ashland, Wisconsin; and the Rabbit Mountain Mining Co., whose head office is at St. Paul, Minnesota.

Most of the lead and zinc is fairly rich in silver, also two remarkable samples are shown by J. & C. Russell, from Calumet Island. They contain 15 per cent. of lead, 44 per cent. of zinc and \$49 of silver per ton. The Frontenac Mining Co., Kingston; W. H. Wylie, Carleton Place; J. & C. Russell, Renfrew; McKellar Bros., Ft. William; and J. McIntyre, Ft. William take the lead. The "great lode" of the Zenith Zinc Mine, on Nipissing Bay, is one of the most extensive known in America. It occurs in segregated lodes of from two to sixteen feet wide, and yielding from 50 to 60 per cent. of metallic zinc.

The specimens of mica are magnificent. They are chiefly from the mines of D. G. McMartin, Stanleyville; J. Smith & Co., Sydenham; W. Martin, Kingston; and D. E. K. Stewart, Madoc.

Notable among the marbles, are those of the Hungerford Marble Co., Toronto; James E. Harrison, Bridgewater; J. McIntyre, Pt. Arthur; and the Penessie specimens from Wolf Lake.

Want of space precludes more than mere mention of the splendid granites of the Canadian Granite Co., Ottawa, the serpentines of the

same firm ; and the arsenic, graphite, asbestos and actinolite, which add so much to the richness and variety of the collection.

The display of baryta, or heavy spar has never been surpassed at any exhibition. There is nearly half a ton of this mineral shown, of unexampled purity. It is from McKellar Island, Lake Superior. The vein is from 39 to 70 feet in width, enclosing three lodes of the mineral varying from one to twelve feet in thickness.

All the salt is from that portion of the province included within the counties of Bruce, Huron and Lambton, on Lake Huron. It is procured from pure brine of great strength, pumped from wells upwards of 1,000 feet deep. G. McEwen, Hensall ; Jos. Williams, Goderich ; the Elarton Salt Works, Warwick ; Gray, Young and Sparling, Seaforth ; Ogilvie and Hutchinson, Goderich ; F. L. Rodgers, Brussels ; J. J. Coleman, Seaforth ; and Exeter Salt Co., Exeter, are the chief exhibitors.

Ontario appears to be rich in phosphate of lime, which is the basis of the best fertilizer ever placed on the market.

This mineral is found in great quantities in the country lying between Kingston and Ottawa. One immense piece, containing upwards of eighty per cent. phosphate, is from the mine of James Foxten, Sydenham. G. W. Cleirhew, of Kingston, Hart & Paget, Perth, and Smith & Co., Sydenham, all exhibit samples, which, by analysis, give from eighty to eighty-five per cent. It is in active demand and is exported mainly to Boston and Liverpool.

There is no lack of first-class building stone in Ontario. Its limestones, as shown by P. A. Johnson & Co., St. Davids ; R. McInnes, Owen Sound ; Co-operative Stone Co., Thorold ; John A. Tallman, Beamsville ; David Kennedy & Son, Guelph ; T. J. Kilpatrick, Kingston ; and Dr. Robertson, of Milton Stone and Lime Co., Milton, attest the high quality of the material in question.

The same may be said of sandstone and freestone, beautiful specimens being shown in cube form from Vert Island, by the Chicago and Vert Island Stone Co., Port Arthur ; P. A. Johnston, St. Davids ; C. F. Gildersleeve, Kingston ; K. Chrisholm, Brampton ; and the Milton Lime and Stone Co., Milton.

Material for the manufacture of brick and fine terra-cotta is also abundant. First-class bricks are shown by M. Curtis & Sons, Peterboro' ; W. Tallman & Son, Beamsville ; Smith Bros., Pt. Elgin ; C. Lethbridge, Owen Sound ; W. J. & W. White, Owen Sound ; W. Nicholson, Merrickville, and the Milton Brick and Terra-Cotta Co., of which Mr. Wyatt, Milton, is manager.

An ingeniously constructed self-flushing drain-trap is exhibited by R. Carroll, of Toronto ; and the specimens of ornamental terra-cotta from

the works of the Hynes Co., Toronto, are among the best produced on this side of the Atlantic.

Messrs. L. H. Johnson, Caledonia; E. B. Borron, Owen Sound; J. McEwen, Owen Sound; Oliver C. Brown, Owen Sound; John H. Tallman, Beamsville; Milton Stone and Lime Co.; Kennedy & Son, Guelph; I. Battle, Thorold; R. J. Doyle, Owen Sound; W. G. Allan & Son, Marlbank, and W. Feeny, Madoc, show very fine samples of gypsum and marl.

Besides the foregoing, the Ontario Exhibit has a number of cases containing choice cabinet specimens from the private collections of John Notman, Esq., Toronto, and W. G. Kidd, Esq., Kingston. These include many beautiful crystals of the common minerals, and a number of finely polished precious stones, such as agate, garnet, amethyst, jasper, sardonyx, etc., etc.

The wall space is occupied by instructive maps and charts, explanatory of geological deposits and mining locations. A glance at the latter enables one to see in a moment the distribution of mining lands from the Lake of the Woods to the Valley of Ottawa, and by means of the former the various systems and formations of geological time are made plain to the intelligent observer.

Deserving of special mention is a large chart "showing northern limits of the principal trees of Canada, by Dr. Bell, of Ottawa." It is drawn by hand from special notes and personal observations, and is exceedingly instructive.

Particularly attractive to analytical chemists are the beautifully colored lithographic plates of "Blow-pipe Reactions on Plaster of Paris tablets, by E. Haanel, Victoria University, Cobourg."

The gentlemen in attendance are assiduous in their desire to give enquiring visitors all the information possible. Handsome sixty-four-page catalogues have been prepared, containing an almost complete list of the Exhibit, and these are distributed freely to interested persons. Copies are mailed free to any address on application, and as the pamphlet contains not only a list of the specimens on exhibition, but a chapter on "Ontario's Mineral Resources," and an abstract of the laws relating to the mineral lands of the province, it is well worthy of being procured and kept on hand for reference.

The Commissioners are the Hon. A. Blue, Hon. T. W. Anglin and Mr. David Boyle, all of Toronto.

GUIDE TO EXHIBITS.

PARK HALL.

Beginning on the right of the 12th street entrance to the Park Building is:

SECTION A.

- 1 A. E. BURKHARDT & CO., 113 W. 4th st., Cincinnati, O.; dealers in furs, hats and caps.
- 3 L. B. THOMS & CO., W. 4th st., Cincinnati; dealers in carpets and house furnishing.
- 4 E. P. REED & CO., Rochester, N.Y.; manufacturers of ladies' shoes.
- 6 WHITE STAR LAUNDRY CO., Cincinnati, O.; laundry work.
- 8 GEORGE HOCKER, 295 Main st., Cincinnati; manufacturer of boots and shoes.
- 9 BAS RELIEF CO., 1280 2d av., New York City; dealers in sculpture and statuary.
- 11 CLOSSON, TRAXEL & MAAS, 186 W. 4th st., Cincinnati, O.; artists' supplies.
- 13 AMERICAN JEWELRY CO., 171 Vine st., Cincinnati, O.; jewelry display.

Passing to the rear of the above display, and immediately beneath the stairs leading to the south tower on 12th st. is exhibit—

- 15 THE MUNRO BATH INSTITUTE, n.w. cor. Clark and Central ave., Cincinnati, O.
- 16 A. GUNKLACH & CO., 96 Canal st., Cincinnati, O.; billiard and pool tables.
- 17 THE AUTOMATIC SAFETY LAMP BRACKET, Meriden, Conn.
- 18 THE BRUNSWICK-BALKE-COLLENDER CO., Cincinnati, Chicago, St. Louis, New York; billiard tables, pool, etc.
- 20 S. HERNSHEIM & BROS., New Orleans, La.; cigars, tobaccos.
- 21 GEORGE A. FLEMING, 15 W. 2d st., Cincinnati; dried fruits.
- 22 ROSENSTEIN BROS., 317 Greenwich st., New York; prunes and dried fruits.
- 24 WM. GLENN & SONS, 68, 70 and 72 Vine st., Cincinnati, O.; wholesale grocers.
- 25 CHAS. F. MUTH, Freeman and Central aves., Cincinnati, O.; dealer in honey and bee-keepers' supplies.

- 27 HENRY STRAUSS & CO., 169 Vine st., Cincinnati; cigars and tobaccos.
- 28 JAMES PYLE & SONS, 436 Greenwich st., New York; dealers in pearl-line.
- 29 LAKE ERIE TOBACCO CO.
- 31 STANDARD TOBACCO & CIGAR CO., Cleveland, O.; dealers in tobacco and cigars.
- 32 ALPINE SAFE CO., 578 W. 6th st., Cincinnati, O.; safes.
- 35 P. F. CARCABA, 1051 Vine st., Cincinnati; Havana cigars, etc.
- 38 BIERMEISTER & SPICER, 195 5th ave., Chicago; collars, cuffs, etc.

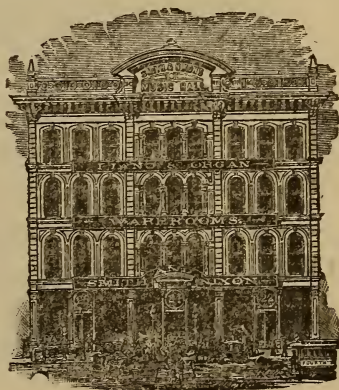
The last exhibit above fronts an exit to an area between the original Park Building and the annex erected for the use of part of the Government display. Immediately to the left of the exit is a portion of the post-office exhibit. Across the aisle, looking west is exhibit—

- 40 B. B. QUINN, (Retsof Mining Co.) 13 Huron st., Cleveland, O.; salts and minerals.
- 41 JOSEPH LOWISSOHN & CO., Birmingham, Ala.; jewelry.
- 43 MRS. W. H. BRISTOL, 406 W. Third st., Cincinnati, O.; art pottery.
- 44 MISS M. C. BRISTOL, 406 W. Third st., Cincinnati, O.; art pottery.
- 73 ROTH & CO., 117 W. 4th, Cincinnati, O.; dealers and manufacturers of gloves.
- 75 J. M. MARSTON & CO., W. 7th st., Cincinnati, O.; house decorations, wall paper, etc.
- 79 ILLUMINATED CHRISTMAS TREE, (Edison Electric Light Co.)
- 81 ROOKWOOD POTTERY, Eastern ave., Cincinnati.
- 83 GLOBE SOAP CO., dealers in soaps.
- 87 BEAN & VAIL BROS., 239 Marker st., Philadelphia, Pa.; tooth powders, soaps, etc.
- 89 HALL SAFE AND LOCK CO., Pearl and Plum sts., Cincinnati, O.; locks, safes and bank vaults.
- 93 KRIPPENDORF, & DITTMAN CO., Sycamore and New sts., Cincinnati; manufacturer of ladies' shoes.
- 95 CRANE BROS., Westfield, Mass., manufacturers of linen papers.
- 100 F. H. CLOSSON, 186 W. 4th st., Cincinnati, O.; artists' materials.
- 102 F. P. HALDY, 4th st. bet. Race & Elm, Cincinnati; boots and shoes.
- 104 THE BARNET BRASS CO., Mansfield, O.; fancy brass furniture.
- 106 EDISON LAMP CO. exhibit, employing nearly 15,000 lamps, and illustrating the capacity for manufacture for 24 hours.
- 108 KNOST BROS. & Co., 137 W. 4th st., Cincinnati, O.; dolls, toys, etc.

THE MOST NOTICABLE FEATURE OF THE EXPOSITION FROM A MUSICAL STANDPOINT IS THE EXCLUSIVE USE OF THE CHICKERING PIANO, BOTH WITH THE ORCHESTRA AND FOR ACCOMPANYING THE VOICES WHEN SOLOS ARE RENDERED.

THESE INSTRUMENTS ARE FURNISHED BY SMITH & NIXON WHOSE EXHIBIT OF CHICKERING, KRANICH & BACH, BRIGGS, KURTZMANN AND STUYVESANT PIANOS IN THE PIANO DEPARTMENT IS THE LARGEST AND MOST ELEGANT DISPLAY THAT HAS EVER BEEN MADE IN THIS COUNTRY, NOT EXCEPTING THE CENTENNIAL DISPLAY AT PHILADELPHIA IN 1876.

TO VISIT SMITH & NIXON'S SPACE TAKE THE ELEVATOR AT THE FOUNTAIN IN THE CENTER OF PARK HALL WHICH BRINGS YOU WITHIN 30 YARDS OF THIS DISPLAY.



Smith & Nixon's Hall and Piano Warerooms.

ESTABLISHED JUNE 11TH, 1843.

SMITH & NIXON,

CINCINNATI, LOUISVILLE, INDIANAPOLIS,
24 & 26 W. 4th St. 622 Fourth Av. 68 N. Pennsylvania.

Wholesale and Retail Representatives for Ohio, Kentucky and Indiana for the

**CHICKERING, BRIGGS,
KRANICH & BACH,
KURTZMANN PIANOS,**

Burdett and Silver Chimes Organs.

—(o)—

Agents wanted in all unoccupied territory. Catalogues and full particulars mailed free on application.

- 110 ——— FREEMAN, 4 E. 4th st., Cincinnati, O.; dealer in perfumery.
- 112 JAMES STEVENS, Coventry, England; silk manufacturer.
- 114 WOLFF & RANDOLPH, Philadelphia; acme blacking, chemicals, etc.
- 116 REVOLVING ELECTRIC FOUNTAIN, exhibited by Committee on Special Exhibits.
- 120 HARRISON BROS. & CO., Philadelphia, New York and Cincinnati; mixed paints.
- 157 MRS. S. S. FACKELTON, Milwaukee, Wis.; china and kilns for firing china.
- 161 DRAKE CO., St. Paul, Minn.; petrified wood.
- 162 McINTOSH GALVANIC BATTERY CO., 141 Wabash Ave., Chicago, Ills.; microscopes.
- 165 HENRY H. ROSE, Cincinnati; Centennial souvenir jugs.
- 181 HENRY ZUBER, 403 Plum st.; engraver on pearl.
- 184 THE ROBERT MITCHELL FURNITURE CO., 107, 109, 111 W. 4th st., Cincinnati.
- 201 WIN SONG WO, Cincinnati; imported chinaware.
- 211 BROMWELL BRUSH AND WIRE GOODS CO., 181 Walnut st., Cincinnati.
- 221 F. SCHULTZ, 20 W. 4th st., Cincinnati; porcelain and glassware.
- 223 A. SMITH & SONS, 172 Fulton st., New York; bronzes and artist brushes.

You are now at the end of the Mitchell display, which includes Ransom Bros., of Cleveland, who have one space, and three of the Mitchell proper (see index), and the next exhibit on the left hand side going south is—

- 231 PAPPENBROCK & CO., 441 Main st., Cincinnati; infants' ware.
- 240 C. S. RANSOM & CO., Cleveland, O.; two skiffs.
- 242 JOHN DOUGLAS & CO., Boston, New York, Chicago and Cincinnati; valve flushing cisterns.

At the foot of the stairs, immediately to the right, is—

- 246 MEADER FURNITURE CO., Cincinnati; suitings, which includes sixty feet.
- 253 EDWIN B. SWIFT, 321 Vine st., Cincinnati, O.; dentists' goods.
- 263 L. ROBERTSON, Cincinnati; dental work.
- 265 L. H. FILENE, 233 25th st., Chicago; glass engraver.
- 271 DR. C. L. HILL, 154 W. 4th st., Cincinnati, O.; dentists' goods.
- 275 F. DECKEBACH, Cincinnati; umbrellas and canes.

You have now reached the tower in the southwest corner of the Main Exhibiting Hall, where you find exhibit—

- 302 GEO F. OTTE, 133 W. 4th st., Cincinnati, O.; carpets, rugs, etc.

THE

Christian Moerlein Brewing Co.

CINCINNATI, O., U. S. A.

BREWERS AND BOTTLERS

— * OF THE RENOWNED * —

.....
* * * * *
NATIONAL EXPORT LAGER,
* * * * *

THE QUEEN OF BEERS.

.....
* * * * *
This beer is brewed from the Choicest Imported and Domestic materials and is absolutely pure.

It is recommended by eminent physicians for the weak and convalescent, and is also admirably adapted for table use.

FIRST PRIZE AWARDED WHEREVER EXHIBITED.

Between the tower and the Twelfth street door, is—
 308 PASTEUR-CHAMBERLIN FILTER CO., Springfield, O.; water filters.

Having examined the displays in the sections south of the fountain, turn to the north and you reach—

SECTION B.

The first exhibit on the right hand side of the aisle as you proceed toward the Elm street entrance, is—

- 402 MRS. ANNIE E. COLLINS, 300 York st., Newport, Ky.; artistic pottery.
 407 MISS MARY J. OWENS, 385 W. 4th st., Cincinnati, O.; artistic pottery.
 410 S. ROSENTHAL, 203 Vine st., Cincinnati, O.; blank books.
 416 P. W. GARFIELD, 271 Main st., Cincinnati, O.; books.
 421 THOS. GIBSON & CO., 273 Walnut st., Cincinnati, O.; plumbing goods.
 432 W. A. WEBB & SONS, Cincinnati, O.; blank books.
 438 THE A. H. POUNSFORD CO., 3 W. 4th st., Cincinnati, O.; blank books.
 440 THE L. L. BROWN PAPER CO., Adams, Mass.; linen ledgers, bond paper, and hand-made drawing-papers.
 455 THE LOUIS SNIDER'S SONS CO., 121 Walnut st., Cincinnati, O.; paper and methods of manufacturing paper.
 462 SCRIBNER'S SONS, New York; publications.

You have now reached the foot of the staircase leading to the south tower on Elm street. To your left, as you face the steps, is the display of the Department of Christian Advancement (No. 485), who occupy the entire floor in the south tower.

Turning north from the Department of Christian Advancement, you walk perhaps twenty steps, passing the Scribner's on your right, and traverse the main aisle leading from the Elm street entrance. The first display on the east of Scribner's is—

- 501 W. R. SMITH & CO., New York; stationers.
 505 M. & R. BURGHEIM, Cincinnati, O.; books.
 527 W. B. CARPENTER & CO., 128 Walnut st., Cincinnati, O.; blank books.

You have now reached the monument of Gen. Rob. McCook, that was erected in Washington Park (the site of the building now covers it) several years ago. The first exhibit on the right is—

- 531 S. B. DUNCAN, 21 Arcade, Cincinnati; gold pens.

FOR THE BEST ARC LIGHT

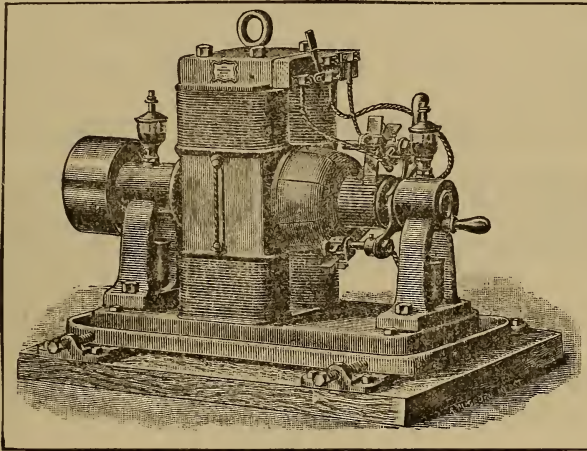
— SEE THE —

WATERHOUSE SYSTEM

✱ AT THE CENTENNIAL EXPOSITION. ✱

Eight Dynamos in the Electric Light Station in the Park Building,
and 240 lamps lighting the Park Building, the Government
Exhibit, the Dome and the surrounding grounds.

Perfect
Automatic
Regulation.



25 Per Cent. saving
of Power over
any other system.

Gold Medal Awarded at the Mechanics' Fair, Boston, 1887.



THE WATERHOUSE ELECTRIC AND MFG. CO.,
HARTFORD, CONN.



W. N. GRAY, GEN'L AGENT,
56 LONGWORTH STREET, - - MURDOCK BUILDING,
CINCINNATI, O.

SEE DESCRIPTION OF ELECTRIC LIGHT PLANT, PAGES 13-17.

533 H. D. PURCELL, Washington C. H., O.; letter files.

535 C. F. BRADLEY & CO., Cincinnati; letter files.

You are again at the fountain; pass around the McCook monument to the elevator (which is also an exhibit by James L. Haven & Co., of 56 Plum st., Cincinnati, O.); passing this, and the first exhibit on the right is—

540 SABIN ROBBINS, 172 Elm st., Cincinnati, O.; wrapping paper and patent roller.

542 THE DIEHL FIRE WORKS, 130 W. 2d st., Cincinnati, O.; designs for pyrotechnics.

544 F. A. FAHLBUSCH, 130 W. 5th st.; toys and fancy goods.

548 MERCHANT'S ROLL PAPER CO., Lexington, Ky.; patent roll papers.

552 ROBERT CLARKE & CO., 61, 63, 65 W. 4th st., Cincinnati, O.; engravings.

556 ACHILLE KERSCHWING, Cincinnati, O.; glass engraver.

You are now at the Elm street entrance, and close to the north staircase leading to the second story. The first exhibit to the right is—

560 W. H. GUNN, 61 E. Front st., Cincinnati, O.; papier mache works.

This brings you to the side aisle in the west wing of the hall. On the left, in the tower, is—

561 THE KINDERGARTEN AND CHILDREN'S DEPARTMENT, under the auspices of Mrs. Alphonso Taft.

The first exhibit on the left, going east, is—

569 THE ARNOLD DOLL MANUFACTURING CO., 118 Undercliff ave., city; dolls.

Across the aisle, the first one on the right, is—

572 JAS. H. MULLIGAN, Springfield, O.; peanuts (special privilege).

575 J. A. BEEBE, 341 E. 18th st., New York City; toilet cream, powder, etc.

578 JOHN C. PIERCE, 110 W. 5th st., city; toys.

581 STROBEL & WILKINS, 144 Walnut st., city; toys.

586 HENRY KLEIN, 509 Vine st., Cincinnati; toys.

589 WHITE SEWING MACHINE CO., Cincinnati and Cleveland, O.; sewing machines.

592 HUME & BEHRE, 228 W. 4th st., city; boots and shoes.

595 SPRINGER TORSION BALANCE SCALE CO., 52 E. 2d st., city; scales.

598 UIBEL & BARBER, 39 Vesey st., New York; jewelry specialties.

CENTENNIAL VISITORS,

— FOR ANYTHING YOU WANT IN *—*

CLOTHING, TAILORING, 

 FURNISHING AND HATS

— GO TO —


FECHHEIMER'S.


They are the only Home Manufacturers of Clothing
who retail, and can

SAVE YOU ONE PROFIT

ON EVERYTHING YOU BUY.


FECHHEIMER BROS. & CO.,

102, 104, 106 and 108 W. 5th Street,

BETWEEN
RACE AND VINE,

CINCINNATI, OHIO.

You are again to the fountain in the main aisle, and on your left will be found the display of Mabley & Carew, 66 to 80 W. 5th st., Cincinnati, which ends Section B. Passing the north side of the fountain, you proceed due east in the direction of the Government exhibit, which will be passed for the present. Turning due north (to your left), you strike the exhibit—

SECTION D.

- 701 THE DISPLAY OF THE PROVINCE OF ONTARIO, CAN., products and minerals, the first section of which is immediately beneath the band stand, at the northwest corner of the Government exhibit. Crossing the aisle, you see another section of the Ontario exhibit. Immediately on the left is—
- 710 THE ESNER & EENDELSON CO., New York and Philadelphia; Carlsbad water and malt extract.
- 712 DR. ENO SANDERS, 9th and Race sts., Cin'ti; mineral waters.
- 714 A. J. THORP, 99 W. 4th st., Cincinnati; typewriters.
- 719 THE BUNDLE ARMS CO., 260 Main st., city; firearms.
- 724 THE F. E. KENNEDY CO., 17 Masonic Temple, city; biscuits, crackers, etc.
- 729 THE BUFFALO SCALE CO., Buffalo, N. Y.; scales.
- 731 THE WHITELEY STEEL CO., Springfield, O.
- 732 ST. LOUIS MINERAL WATER CO., St. Louis; mineral water.
- 736 KING'S GREAT WESTERN POWDER CO., Cincinnati.
- 740 W. C. BEALE & BRO., 332 Central ave., Cincinnati; paints, etc.
- 745 THE RIVERSIDE IRON WORKS, s. w. cor. 4th and Main sts., city; steel pipes, nails, etc.
- 748 THE D. HARTER MEDICINE CO., 213 N. Main st., St. Louis, Mo.; patent medicines.
- 750 POTTER, PARLIN & CO., s. e. cor. Pearl and Lawrence, city; spices, baking powder.
- 755 FISHER ICE TOOL CO., Hamilton, O.; ice tools.
- 760 C. E. JONES & CO., 55 Longworth st., Cincinnati; electrical apparatus.
- 765 THE EUREKA FOUNDRY CO., 129 Gest st., Cincinnati; grates, mantels, etc.
- 768 H. DISSTON & SONS, Philadelphia, Pa.; saws, etc.

This brings you to the extreme north corner of Section D, immediately adjoining the electric light plant:

WATERHOUSE ELECTRIC CO., Hartford, Conn.; arc light.

WESTERN ELECTRIC CO., Chicago, Ills.; arc light.

MATHER ELECTRIC CO., Manchester, Conn.; incandescent light.

CINCINNATI EDISON ILLUMINATING CO., Cincinnati, O.; incandescent light; which can be seen through the large glass window facing you. At your right hand, in the corner, are the offices of the Building Committee and the Electric Light Department. As you turn to the left you pass between the Disston display (already noted) and the electric light plant, which occupies the extreme north end of the building. This brings you to the main aisle, on which the Disston exhibit is again seen. Passing this, the first display on your left, is—

- 771 G. & H. BARNETT, Philadelphia, Pa. ; files.
 776 CINCINNATI TOOL CO., 216 W. 2d st., Cincinnati ; tools.
 779 F. & J. HEINZ, Pittsburg, Pa. ; pickles and canned fruit.
 787 M. E. KUHN, 62 W. 4th st., Cincinnati ; umbrellas and parasols.
 789 CINCINNATI AUGER WORKS, (Hardesty & Co.) Cincinnati ; augers, etc.
 795 P. J. RITTER, 147 W. 6th st., Cincinnati ; preserves.
 797 PETERS CARTRIDGE CO., Cincinnati.
 801 PHIL BEST BREWING CO., Milwaukee, Wis. ; tonic.
 809 CLEMENS HELLEBUSH, 75 W. 4th st., Cincinnati ; jewelry and statuary.

The visitor has now arrived at the north side of the fountain. Turning to the right, you see the display of—

- 814 MABLEY & CAREW, 66 to 80 W. 5th st., Cincinnati ; clothing, hats and shoes.

Traversing the main aisle again, to the north after leaving Mabley & Carew, the first display on your left is—

- 816 BARTHOLDI SUSPENDER CO., New York ; embroidered suspenders.
 824 L. M. PRINCE, 148 W. 4th st., Cincinnati ; optical goods.
 826 THE F. W. MEYER MANUFACTURING CO., Covington, Ky. ; wire and brass goods.
 832 POST & CO., s. w. cor. Elm and Pearl sts., Cincinnati, O. ; electric goods, lamps and railway supplies, also standard electric works.
 834 T. A. SNIDER PRESERVE CO., 49 and 51 Sycamore st., Cincinnati, O. ; preserved fruits, jellies, catsup, etc.
 838 JOHN MATHEWS, 1st ave., 26th and 27th sts., New York ; soda fountain.
 840 THE HUDDART SCALE CO., 10 w. 2d st., Cincinnati ; scales.

This brings you to the door leading to the electric light plant. After viewing this exhibit through the glass partition, you turn to the left and the first exhibit is—

- 845 JOHNSON BROS., cor. 5th and Central ave.; axes.
 847 GEO. UPTON, 239 Franklin st., Boston; isinglass and glue.
 851 BROCKMAN POTTERY CO., 440-458 Richmond st., city; pottery ware.

Here, turning to the left, is the east end of the Exposition Commissioners' dining room, on the walls of which three exhibits—

- 854 C. H. HOLLIDAY, 191 W. 5th st., Cincinnati; graining.
 856 R. KNECHT, 504 Elm st., Cincinnati; barbers' supplies.
 858 A. SCHMIDT, Jr., & CO.; macaroni.

Passing south a few steps you reach, immediately in your front, the Centennial Popcorn and Candy Stand, on your right; on the left still, the Brockman Pottery exhibit above alluded to. To the left, at the foot of the stairs leading to the main restaurant, is exhibit—

- 860 JAS. ROSS, 41 W. Court st., city; butchers' tools.
 861 STELLA GRATE CO., Cincinnati; grates.

Turning south, at the foot of the restaurant stairs you are confronted again by the Mathews soda fountain, from which J. R. Peebles' Sons, Cincinnati, sell soda water, having bought the privilege. This brings you across the aisle. In your front is exhibit—

- 865 JOHN HOLLAND, 19 W. 4th st., city; gold pens.

By taking three steps to the right you strike the west side aisle, and, immediately opposite the Holland display, is exhibit—

- 870 CHAS. EVANS, 177 W. 4th st., Cincinnati; artificial limbs.
 872 T. T. RANDOLPH, 31 Carlisle Building, 51 W. 4th st., Cincinnati; surveyors' instruments.
 875 E. & J. SCHWEIBERT, 19 W. 4th st., city; jewelers' supplies.
 881 FECHHEIMER BROS., 102 W. 5th st., Cincinnati; clothing, both sides of the aisle for forty feet, which brings you to another cross aisle (east and west), on the west end of which is exhibit—
 885 THE SINGER SEWING MACHINE CO., s. w. cor. 5th and Race, city; sewing machines.

This exhibit runs south sixty feet. Opposite the Singer display is exhibit—

- 890 DUHME & CO., s. w. cor. 4th and Walnut sts., Cincinnati; jewelry.

Here is another cross aisle, on which is the display of Mabley & Carew, 66-80 W. 5th st., around which you can pass to the fountain in either direction. At the south end of the Singer display is door No. 2, which leads to the park, in which are benches under shade trees, for the

benefit of the visitor. Passing this door, however, to the south, on your right, is the photographer.

This ends section D. You are now on the northwest side of the fountain. Passing in front of the Uibel & Barber's display, ten steps west will take you to the elevator (in the west wing of the building) on which you ascend to the second story of the main exhibiting hall. At the landing of the elevator enter—

SECTION B.

SECOND FLOOR, MAIN EXHIBITING HALL.

The first exhibit here to your left is—

1000 F. W. ALMS MANUFACTURING CO., 15-23 Buckeye st., Cincinnati; furniture.

Directly in front of the elevator landing is exhibit—

1009 HENRY OSCAMP, 71 W. 5th st., Cincinnati; furniture.

Turning to your right and going west, on your right hand side is exhibit—

1010 THE BALDWIN MANUFACTURING CO.; refrigerators.

Immediately opposite is exhibit—

1113 THE ROYAL PARLOR FURNITURE CO., 264 W. 4th st., city; furniture.

1114 ADAM HARDING & SONS, 308 Main st., city; furniture.

1119 SPIEGEL & THOMS, Indianapolis, Ind.; furniture.

1122 CARL A. LINDNER, Louisville, Ky.; furniture.

This brings you to the cross aisle and the stairway. Passing the head of the stair-case, you come to the exhibit, on both sides of the aisle, of

1127 THE E. D. ALBRO CO., 685-711 W. 6th st., Cincinnati; veneering.

On your right, at the north side of the extreme west end of this wing, you come to the head of the stairs leading to the north tower, on Elm Street, in which are the social rooms of the

CINCINNATI PRESS CLUB.

Leaving the club-rooms you pass again to the E. D. Albro exhibit, which brings you to the south tower, on Elm Street and the stairway leading to the balcony on the third floor of the Main Exhibition Hall, and from which a view of the western portion of the city can be had and the surrounding hills, notably Price Hill.

Descending from the balcony, and turning to your right, you pass down the side aisle (the stair-case on your left) coming to exhibit—

1135 THE ROYAL PARLOR FURNITURE CO., 264 W. 4th st., city; parlor furniture.

1141 CHAS. A. BIGEON, 208 W. 5th st., Cincinnati; furniture.

1147 THE CHALLENGE REFRIGERATOR CO., 214-218 Wade st., Cincinnati; refrigerators.

Immediately opposite the last named exhibit is Kiefaber Bros., of Dayton, who have the popcorn and candy privilege. You are now at the southwest angle of the "well hole" beneath the dome, and overlooking the "Fairy Fountain," from which a magnificent view can be had of the scene on the first floor. Passing to the right the first exhibit on the right is—

1150 THOS. KELSALL, McLean and Richmond sts., Cincinnati; office desks.

1154 GEO. FELDCAMP, 38 Central ave., Cincinnati; chairs.

1160 SMITH & NIXON, 24-26 W. 4th st., Cincinnati; pianos and organs.

The last named exhibit embraces 160 feet, nearly the whole length of the aisle on the right. At the south end of the Smith & Nixon exhibit, you come to a cross aisle, and just in your front facing south, is a portion of the exhibit—

1166 JOHN CHURCH & CO., 74 W. 4th st., Cincinnati; pianos and musical instruments.

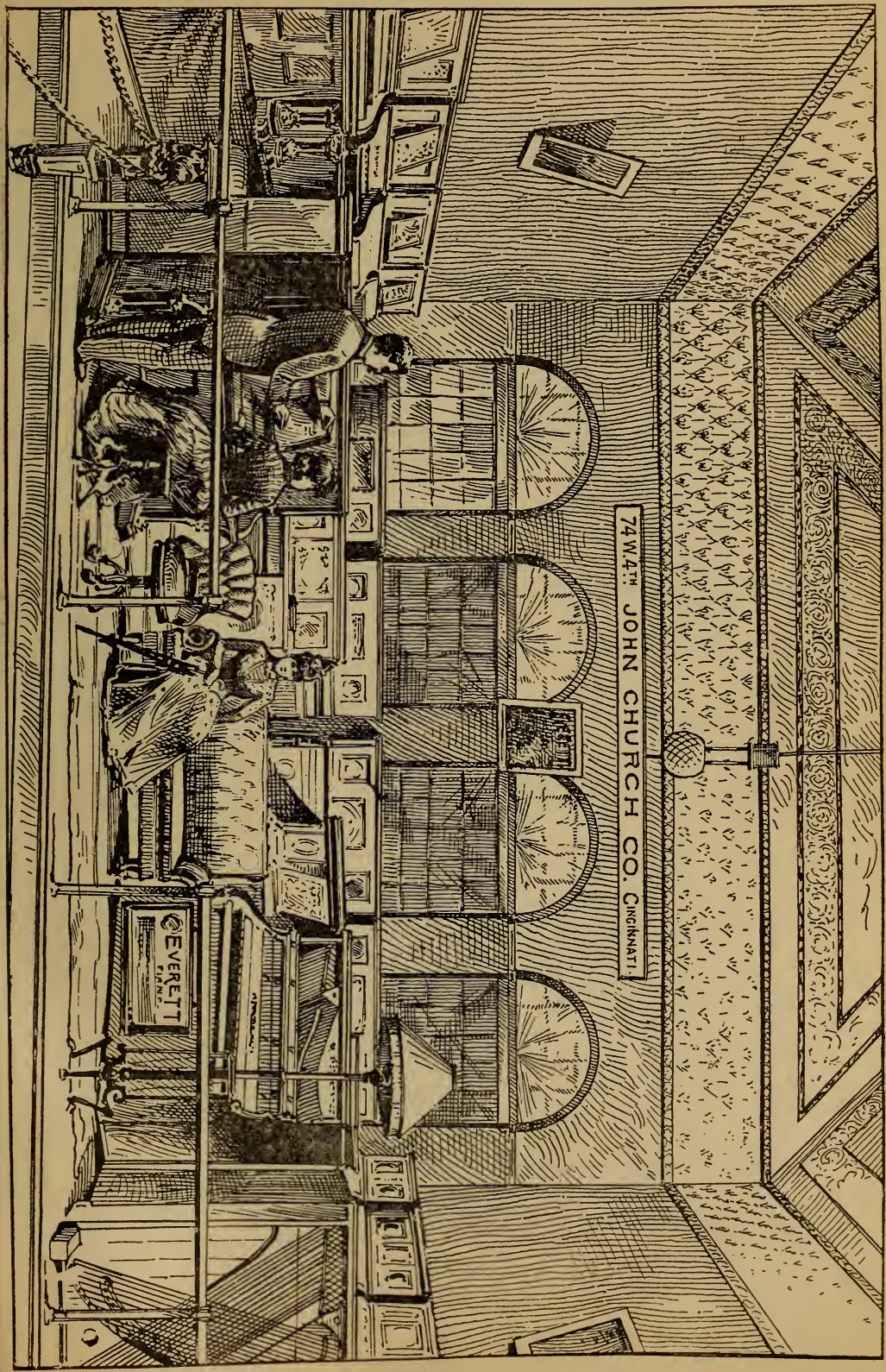
To the right on the wall is exhibit—

1168 S. W. WILCOX; violin pegs, etc.

Turning a sharp angle to the right you descend nine steps, into the northwest tower of the south wing, in which is the exhibit of Northern Kansas, consisting of natural products and minerals. From this room also, is a passage way leading to the first floor. Returning from the Kansas exhibit, you pass along an aisle, on which is a portion of the exhibit of the State of Florida, which brings you to the entrance of the southwest tower of the south wing, which contains another and larger portion of the State of Florida exhibit. Returning from this tower, on your right, on a side aisle, on the left of which can be seen another section of the John Church & Co.'s exhibit, to a point opposite the main aisle, brings you to the main exhibit of John Church & Co., in the extreme southern section of the building. Still continuing on the side aisle, to your left is the exhibit—

1170 D. H. BALDWIN & CO., 150 W. 4th st., Cincinnati; pianos.

1176 LINDEMAN BROS., 181 W. 4th st., Cincinnati; pianos.



74th JOHN CHURCH CO. CINCINNATI

EVERETT
FINISH

Turning to the left from the last mentioned display you proceed to the main aisle, and encounter another section of the D. H. Baldwin exhibit.

1182 ALBERT KRELL, 144 W. 4th st., Cincinnati; pianos.

1184 RUDOLPH WURLITZER & BROS., 115 Main st., Cincinnati; musical instruments.

At this point, on both sides of the aisle, will be found—

1186 THE FLORIDA EXHIBIT, consisting of fruits, cereals and all the products of the State of Florida.

1187 CONTINENTAL CABINET CO., corner Court and McLean Ave., Cincinnati; fancy cabinet furniture.

1189 THE GOOCH FREEZER CO., N. W. corner 9th and Sycamore sts., Cincinnati; ice cream freezers.

1192 UDELL WOODEN WARE WORKS, Indianapolis; wooden ware.

Directly opposite the last named display, and immediately south of the "well hole," or rotunda, is exhibit—

1194 SCHIRMER & STOCK, 60 to 66 Pendleton st., Cincinnati; fancy tables.

Bearing to your right, the first exhibit to the right, along the south wall of the east wing, is exhibit—

1196 PERU DRY AIR REFRIGERATOR, Peru, Ind.; refrigerator.

On the left across the aisle is another stand of popcorn.

1198 E. L. MILLER, Peru, Ind.; Miller and Perfection fire backs.

1200 THE MARKS A. F. CHAIR CO., 930 Broadway, N. Y.; medical and surgical operating chairs.

1204 THE LOVELL MANUFACTURING CO., Erie, Pa.; clothes mangle, and reclining chair.

1206 W. W. BARNUM, Indianapolis; folding mosquito canopy.

1208 THE CINCINNATI WOVEN WIRE MATTRESS CO., No. 543 W. 6th st., Cincinnati; woven wire mattresses.

1210 THE MEYER & MECKLE MANUFACTURING CO., 247 and 249 Sycamore st., Cincinnati; fancy parlor furniture, mantels and statuary.

1214 R. ROTHSCHILD'S SONS CO., 156 W. 5th st., Cincinnati; bar fixtures and billiard tables.

1216 THE FRANKLIN FURNITURE CO., corner Sycamore and Franklin sts., Cincinnati; furniture.

Passing between the stairs above the Race Street entrance, occupying the whole side of the hall, is exhibit—

1220 THE HUSS BROS. CO., 2d and Race sts., Cincinnati; bar fixtures.

Returning towards the fountain or rotunda, the first exhibit on the right is—

1221 WISHART & KNAPP, Marion, Kansas; gasoline flat iron.

1225 BELDING MANUFACTURING CO., Belding, Michigan; refrigerators.

1228 THE STEVENS FILTER CO., Toledo, Ohio; filters.

This brings you to the elevator on the east side of Park Hall. The only exhibit beyond this elevator on the (2d) floor, is—

1232 THE H. F. WEST BRO. CO., 139 and 141 W. 4th st., Cincinnati; refrigerators, ice coolers and stone filters.

Taking the elevator you descend to the first floor. On your right is the fountain; immediately in your front is the model Post-office, which is in the immediate vicinity of the Government exhibit. For Guide to Government Exhibit see pages —.

From the Fountain you pass north along the main aisle to a cross aisle. Turning to your left between the celebrated Soda Fountain and the exhibit of T. & A. Snider, passing the exhibits of John Holland and Charles Evans, you come to another cross aisle at the south end of which is the elevator to the Centennial Restaurant and Cafe. This elevator is built and operated by the Warner Elevator Co. Turning north ten paces you are immediately in front of the main aisle of Section E. On the side aisle to your left are the offices of—

1. Bureau of Information.
2. Chief of Police.
3. Printing and advertising.
4. The Ohio State Commissioners.

And on the side aisle to your right are the offices of—

1. Western Union Telegraph, Reporters and Telephone Station.
2. Department of States, and Rules, Jurors and Awards.
3. Ladies Hospital.

The first exhibit on your left—

1235 THE AMERICAN WRITING MACHINE CO. (Type Writers),
14 west 4th street, Cincinnati.

Opposite this display, the first on your right is—

1238 FRANK BURDENS, Brooklyn, N. Y.; microscopes, etc.

1240 HOPKINS & ROBINSON, Louisville, Ky.; cash registers.

1243 THE NATIONAL CASH REGISTER CO., Dayton, O.; cash registers.

Opposite this is—

- 1245 PAYNE & PRATT, 17 Public Square, Cleveland, O.; type writers.
 1248 BOEHME & PFLUEGER, 185 Race st., Cincinnati; watch-makers and jewelers' supplies.

Opposite this is—

- 1250 THE HAMMOND TYPE WRITER, 75 and 77 Nassau st., New York; type writers and the Edison mineograph.

Opposite this is—

- 1253 FERD. WAGNER, optical goods, 168 Race st., Cincinnati, O.
 1255 MAX WOCHER & SON, surgical instruments, 105 west 6th st., Cincinnati, O.

Opposite this is—

- 1258 SAMUEL A. CROCKER, 117 and 121 west 5th st., Cincinnati, O.; dental and surgical instruments.

This brings you to the bridge crossing Elm Street to Music Hall. From the east end of this bridge you will find a double stairway leading to the Restaurant.

MUSIC HALL.

The visitor having now arrived at the eastern terminus of the Music Hall Bridge across Elm Street, he will proceed west, crossing the Bridge, which brings him to the main entrance to Music Hall. Turning to the left and crossing the area between Horticultural Hall and Music Hall proper, on your left is the Treasurer's office, and the Commissioners' office. Immediately in your front is the Secretary's office. This latter office occupies the extreme southeastern portion of the permanent building. Turning sharply to the right you are confronted by the magnificent display of—

SAN DIEGO, CALIFORNIA.

Bearing to the left, still going west, on your left-hand side is a large room fitted up as a retiring room for ladies, furnished in good style and very comfortable. On the eastern wall of the room on the outside is seen an oil painting, 21 feet by 7, of San Diego and National City, California, painted in 1886.

Descending two steps you are in—

HORTICULTURAL HALL,

which at night is lit by innumerable incandescent lights, and where is seen the most elaborate electrical effects. Nooks and grottoes, trellised walks, rare plants, hanging fountains, all lit up with parti-colored electric lights, render this part of the Exposition the most attractive of any for lovers of the beautiful and picturesque. On the left of the garden is found a cascade, the electric lights so arranged that a rainbow of globes is seen, while beneath the cascade over which the water dashes are colored globes, giving it a most beautiful appearance. To the right of the aisles, going west, are grottoes in which visitors can be served with creams and ices, by young girls handsomely uniformed. In the center, surrounded by exotics, is seen a beautiful fountain—a figure with outstretched arm, around which a snake is entwined, from whose mouth issues a stream of water which breaks into a spray twenty feet above the top of the figure.

In rear of the cascade is located the apparatus by which all the lights of the garden are worked.

Continuing on westward, two steps taken upward will bring you to the ice-cream parlor, where light refreshments are served. This department occupies about seventy-five feet square of the extreme western end of Horticultural Hall. Chinese lanterns, which are lit at night in this locality, give the place an inviting appearance. To your left as you enter this place is seen a large apartment, fitted up for the use of the Commissioners, who hold regular weekly sessions, and sometimes special meetings. Separated from the main room on the east is the private office of President James Allison. Bearing to the right you come to a door leading into the south area separating Music Hall proper from Horticultural Hall.

Descending seven steps, crossing the area, and ascending the same number of steps, you are at the foot of the stairs in the extreme western end of Music Hall, and in the south corridor of Music Hall. In your front (and to the left), in the corner, is another stand of Kiefaber Bros. of Dayton, who have the popcorn and candy privilege. At this point you turn sharply to the right, ascending the stone steps, twenty-nine in number, and you are in the second story of the southwest part of Music Hall. Immediately in your front at the head of the stairs, is exhibit—

1259 THE BUCKEYE MARBLE AND FREESTONE CO., s. w. corner 2d and Eggleston ave., Cincinnati; marble mantels.

Turning to the left, traversing a broad aisle, on your right, near a door leading into the gallery of Music Hall, is exhibit—

1260 JOHN LENTZ, 280 Main st., Cincinnati; past-board fancy work.

Next is—

1261 J. B. SCHRODER & CO., corner 3d and Elm sts., Cincinnati; builders hardware.

1262 THE EXCELSIOR PORTABLE, STATIONARY AND AUTOMATIC BURGLAR ALARM, 106 Euclid ave., Cleveland.

1263 CENTRAL EXPANDED METAL CO., Pittsburgh, Pa.; wire goods.

In your front is found another of Kiefaber Bros. candy and popcorn stands. On your left as you turn west, is exhibit—

1264 THE PATENT REVOLVING WINDOW SASH CO., E. Wagner, agent, 672-674 Elm st., Cincinnati.

At this point you pass through a narrow door, still going south, on your left is exhibit—

1265 J. H. WESTON, 27 W. 6th st., Cincinnati; lightning rods.

A few steps further you reach an arched doorway leading into a large room in the second story of the southwest corner of Horticultural Hall. To the right of this door is exhibit—

1266 WILLIAM MILLER, 4th and Cedar sts., Milwaukee, Wis.; sliding blinds.

To the right of the above is—

1267 THE ROSE POLYTECHNIC INSTITUTE, of Terre Haute, Ind.

In this same room, which is devoted exclusively to technical schools, will be found exhibits from Chicago, Brooklyn, Cleveland, Cincinnati. On the eastern side of this room is exhibit—

1268 THE ARTISTIC GLASS PAINTING CO., 3 W. 5th st., city.

Retracing your steps to the arched doorway mentioned above, and to a broad aisle, on your right is exhibit—

1269 THOM SHINGLE AND ORNAMENT CO., n. w. corner of 12th and Callowhill sts., Philadelphia.

Next on the right is exhibit—

1270 THE SIDNEY PLANING MILL CO., Sidney, O.; Hill's patent sliding inside window blind.

On the left is—

1271 W. H. PEROT, Baltimore, Md.; ornamental terra cotta work.

1272 CLANDY & SEILER, 61 & 63 Court st., Cincinnati; patent attachment to window frames and sash.

1273 A. B. TAYLOR, Kirby Road, 25th Ward, Cincinnati; box window frames and reversible and self adjusting sash.

Here is encountered another arched doorway leading into another portion of Horticultural Hall, overlooking the Horticultural garden, with the cascade on your right. The first on your right after passing through the doorway is exhibit—

1274 C. C. HARRIS, 42 s. Clinton st., Chicago; the new ideal embroidery machine.

On the left directly opposite is exhibit—

1275 JOS. LAZARUS & CO., 202 w. 4th st., Cincinnati; feather renovator; who has also a show case in the center of the floor.

Bearing to the left is an immense show case, or a series of them, against the northern wall, containing the exhibit—

1276 THE WOMEN'S EXCHANGE, s. e. corner Race and Longworth, city.

Immediately in front of the Exchange is exhibit—

1277 NONOTUCK SILK CO., 88 w. 3d st., city; Corticelli spool silk.

To the right of the last mentioned exhibit, and near the veranda overlooking the Horticultural garden, and immediately opposite a large door leading from Music Hall proper is exhibit—

1278 A. DECKER BROS. PIANO, furnished by D. H. Baldwin & Co., 158 w. 4th st., city.

Beginning at the door last mentioned, and occupying fifty feet along the north wall and part of the main aisle is exhibit—

1279 THE DOMESTIC SEWING MACHINE CO., 180 west 4th st., Cincinnati; sewing machines, embroidery and fancy work.

Adjoining the show cases of the last mentioned exhibit, reaching to the steps leading to the Art Gallery further east, is another portion of the display of the Women's Exchange. To the right of the steps mentioned, is exhibit—

1280 AUGUST MOLL, 15 and 17 Mercer st., N. Y., and 235 and 247 Lynch st., Brooklyn, N. Y.; bindings, lacings and novelty braids.

To the left of the steps is exhibit—

1281 WOMEN'S DEPARTMENT, St. Francis de Sales Church, Walnut Hills, Cincinnati; gold embroidered vestments, pictures, etc.

Ascending twelve steps you are in—

ART HALL.

This department consists of three large rooms, and is situated in the southeastern portion of the permanent Music Hall building, and which contains the finest collection of paintings ever seen in this country, the aggregate value of which is estimated at over one million dollars. Leaving the main gallery and going east you enter a corridor, perhaps one hundred feet in length, and running north and south. This corridor is filled with photographs and architectural drawings, among them being Landy, S. A. Wood, Skewe, Constance A. Baker, M. S. Paden, A. Roeschke, Weingartner—all Cincinnati artists.

Crossing this corridor, is a stairway leading down to first story, striking the level about the Secretary's office. Instead of taking these stairs at this time, turn to the left, passing Landy's and Weingartner's photographic displays, you enter another apartment devoted exclusively to a display of the—

1282 HOME SEWING MACHINE CO., s. e. corner of 8th and Race sts., Cincinnati.

The above exhibit also includes a small room on the east of the main department. Leaving this display and going due west you descend four steps into the south corridor (east end) of Music Hall. On the left is another popcorn, lemonade and candy stand of Kiefaber Bros., Dayton, O. On the right of and near the steps, is another section of the—

1283 WOMEN'S DEPARTMENT, consisting of pictures in embroidery, and a statue in plaster of paris, representing the "Genius of Astronomy," by Albert Jaegers, 231 Brown st., Cincinnati.

To the right of the above mentioned statue and a few steps north is exhibit—

1284 SAMUEL ACH & CO., 179 w. 4th st., Cincinnati; Parisian beaded work and millinery.

1285 LAROE & KYLE, 107 John st., Cincinnati; perforated stamping patterns.

Leaving this display and proceeding due north you come to the gallery railing overlooking the grand rotunda of Music Hall. On your right is exhibit—

1286 MRS. MOODY, 130 w. 7th st., Cincinnati; tailor system of dress cutting.

1287 M. HOLZER, 567 Vine st., city; French system of cutting garments.

Continuing on you pass a door leading to a balcony above the main entrance to Music Hall, overlooking Elm Street. Next, is exhibit—

- 1288 FERNANDO B. SMITH, 176 and 186 east 4th st., Canton, O.; Deals' fabric tufter.
 1289 MISS L. AUBACH, 241 E. Indiana st., Chicago; fancy painting, also stamping.

At this point, to your right, is a door in the corner of this section, leading into the private office of the Secretary of the Exposition. Immediately in your front and to the left of the door mentioned is exhibit—

- 1290 GRACE HAZEN, Avondale; canvass canoe.
 1291 MRS. GEO. H. LAKE, Reid Building, Cincinnati; artistic decorations.
 1292 WM. VARNEY, 120 Tremont st., Boston, Mass.; porcelaque.

To the west of the last display and adjoining the wall to the right of the north door as you enter the gallery of Music Hall is exhibit—

- 1293 C. A. GOETZE, 376 Vine, Cincinnati; card writer.

Turning to the left and passing the door above mentioned, the first exhibit on your right is exhibit—

- 1294 MRS. E. & P. VERGES, 573 Elm st., Cincinnati; painting and art needle work.
 1295 MISS ADDIE ALDRICH, Cincinnati; tapestry painting.
 1296 MRS. J. STANAGE, Park Place, Mt. Auburn, Cincinnati; specimens of carving.
 1297 MISS LIDA RANDLE, Cincinnati; specimen of carving.
 1298 CHICAGO ORNAMENTAL WORKS, Chicago; embroidery and fancy work.

Turning the corner at this point, passing another candy stand and entering the south corridor, the first on the right is exhibit—

- 1299 JOSEPH WALKER, 216 w. Court st., Cincinnati; wax work and embroidery.

Diagonally across the aisle to the left and facing the stair case leading to the first floor is exhibit—

- 1300 J. G. JOPP & CO., 504 Main st., Cincinnati; human hair and fancy goods.

Across the aisle is—

- 1301 DAVID GREEN, Cincinnati; fan attachment for sewing machine.
 1302 MRS. I. HILLEN, Cincinnati; safety stirrups.
 1303 L. H. GOODWIN & CO., Avondale, Cincinnati; thread controller.
 1304 GEO. H. PARKER, New York City; art pottery.

1305 JOHN C. MALONE, 222 Calhoun st., Cincinnati; ornamental card baskets.

You have now reached the point where you left off to go to the Technical School. All the exhibits in this corridor having now been located, you pass on west to the end of this corridor, and turning to the right you pass through a door into a room 20x30, devoted to exhibit—

1306 CINCINNATI CORRUGATING CO., Eggleston ave., Cincinnati; iron house and roofing, siding and corrugated iron.

Bearing to the left you enter another door (No. 11), and on the left is exhibit—

1307 STANDARD CARRIAGE IRON CO., Cincinnati; carriage irons.

1308 LAIRD'S AUTOMATIC COUPLING.

1309 ROYER WHEEL CO., Cincinnati; patent wheels.

The three displays mentioned above occupy a short corridor directly in rear of the "Big Organ." Entering a triangular apartment through a door close by the last display on the right, is exhibit—

1310 DEXTER SPRING CO., Hulton, Pa.; buggy springs.

1311 CHAS. HANAUER, 258 Walnut st., Cincinnati; Victor cycles.

This brings you to a door leading into the north corridor of Music Hall. You are now at the extreme western end of this corridor. On your left, as you enter, is exhibit—

1312 LOUIS COOK CARRIAGE CO., Cincinnati; "Daisy" and "La Mascotte" buggy tops.

On the right of the door is exhibit—

1313 THE OHIO BUGGY CO., 270 and 284 n. 4th st., and 181 to 191 east Naughten st., Columbus, O.; fine vehicles.

At the eastern end of this display and facing a stair-case leading to the ground floor (rear) of Music Hall, is exhibit—

1314 J. T. GROVES, 467 Central ave., Cincinnati; buggy top and carriage irons.

Next on the right is—

1315 THE AMERICAN QUEEN SPRING CO., Cincinnati; springs and gears.

1316 THE J. W. MARCY CO., 8th st. and C. H. & D. R. R., Cincinnati; carriage wood work and gears.

1317 MICHAEL NAYLON, 39 Jones ave., Cleveland; fire escape.

1318 STANDARD AXLE & MANUFACTURING CO., Wheeling, W. Va.; axles.

1319 RECKNAGEL & CO., 106 Broad st., New York; washing machines.

Across the aisle at this point, to your left, and facing the stair-case leading to the front corridor of Music Hall, is exhibit—

- 1320 R. M. BARTLETT COMMERCIAL COLLEGE, n. w. corner 4th and Sycamore sts., Cincinnati; a system of teaching book-keeping and keeping books.

Across the aisle diagonally to the left is exhibit—

- 1321 THE OWEN ELECTRIC BELT AND APPLIANCE CO., 191 State st., Chicago; electrical appliances.

From this point you go perhaps fifty feet, passing a lemonade stand on either side, and taking four steps upward you enter an apartment perhaps 40x40. On your left is exhibit—

- 1322 F. TUCHFARBER & CO., n. e. corner Court and Sycamore sts., Cincinnati; iron and glass show cards.

To the right is exhibit—

- 1323 THE AMERICAN RAILWAY & COMMERCIAL ADVERTISING CO., 2d and Sycamore sts., Cincinnati; embossed, sand, blast and mirror, glass show cards.

To the right is exhibit—

- 1324 THE NOVELTY SIGN WORKS, Covington, Ky.; novelty signs.

To the left of the above and facing the entrance is exhibit—

- 1325 WARD BROS., Columbus, O.; advertising novelties, albums, souvenirs.

Turning sharply to the left you pass through an arched doorway and enter a small lobby. On your left is exhibit—

- 1326 H. W. WEISBRODT, s. e. corner 5th and Walnut, city; designer and wood engraver.

Passing through another arched doorway on the right is exhibit—

- 1327 PHILIP PITTON, 96 13th st., Cincinnati; patent ice shoes for horses.

- 1328 ANDREW GRAFT, Brooklyn, New York; sporting shoes.

- 1329 GAENSSLEN BROS., Cleveland, O.; hemlock sole-leather.

- 1330 S. H. HALSTED & CO., n. w. corner 6th and Main, Cincinnati; seamless woolen hosiery and mittens.

On the left is exhibit—

- 1331 CHARLES H. WUST & CO., 228 Walnut st., Cincinnati; woolen and cotton hosiery, mittens and gloves, and yarns.

Turning to the right, passing the Halsted exhibit, you pass a broad aisle. On your left is exhibit—

- 1332 ORNSTEIN & RICE, 101 w. 3d st., Cincinnati; neck wear.

1333 THE INDIA RUBBER COMB CO., New York ; rubber goods.

Crossing an aisle at this point, on your right is exhibit—

1334 PERKINS & MILLER, 135 Sycamore st., Cincinnati ; box loop wax thread sewing machine.

On the same side and quite near the last mentioned display is a passenger elevator running from the first to the third floor. Immediately beyond is exhibit—

1335 ST. LOUIS CORSET CO., St. Louis, Mo.; corsets.

Across the aisle is exhibit—

1336 FERNANDO B. SMITH, 176 to 186 e. 4th st., Canton, O.; Deal's fabric tufter.

1337 McCALLUM CONSTABLE HOSIERY CO., Holyoke, Mass.; fine silk hosiery.

On the right is exhibit—

1338 MENDEL, ROSENBERGER & CO., 41 and 43 Race st., Cincinnati ; trunks and valises.

1339 DEERING, MILLIKEN & CO., 79 and 81 Leonard st., New York ; samples of flour bags.

1340 F. & C. HÖFFNER, 7 to 21 Ethan st., Camp Washington, Cincinnati ; oak harness leather.

1341 MORROW BROS. MANUFACTURING CO., Washington C. H., O.; horse collar pads.

In the corner of this apartment is a fac simile in cloths of the house in which General Grant was born, by—

1342 FECHHEIMER BROS., 102 to 108 w. 5th st., Cincinnati ; cloth house. Across the aisle is exhibit—

1343 CHICAGO CORSET CO., 202 Franklin st., Chicago ; Ball's corset.

1344 M. WUST & SON, 413 Main st., Cincinnati ; woolen hosiery, knit jackets and stockings.

1345 WATERBURY RUBBER CO., 49 Warren st., New York City ; armored hose.

1346 J. H. KOHMESCHER & CO., 161 Main st., Cincinnati ; India rubber goods.

1347 THE PRINCESS OF WALES CO., 458 Broadway, N. Y.; Her Majesty's corsets.

1348 I. E. PALMER, Middletown, Conn.; hammock attachments and cotton tissues.

This finishes the exhibits in this apartment. Turning to the right from the last mentioned display, you come to a large door leading into the old Power Hall, second story. From this door are steps leading in either direction.

Taking the right hand side of the staircase and descending, you are immediately confronted with exhibit—

1349 ENTERPRISE CARRIAGE CO., Sycamore and Canal sts., city; carriages and buggies.

To the left and against the western side of the staircase platform is exhibit—

1350 SPIRAL SPRING BUGGY CO., Grand Rapids, Mich.; the original spiral spring cart.

Turning square to the west and proceeding down the aisle westwardly, on your left a "well hole" overlooking the first floor of old Power Hall, now devoted to other kinds of exhibits. The next after the Enterprise is exhibit—

1351 COOK CARRIAGE CO., Spring Grove Avenue and Straight st., city; carriages and buggies.

1352 GLOBE CARRIAGE CO., Liberty and Walnut sts., city; carriages and buggies.

1353 W. H. BOWEN & CO., Sycamore st., between 7th and 8th, city; carriages and buggies.

1354 RATTERMAN & LUTH, 8th and Evans sts., city; carriages and buggies.

1355 THE HAYDOCK CARRIAGE CO., Plum and 12th sts., city; carriages and buggies.

1356 THE EMERSON & FISHER CO., cor. John and Findlay sts., city; carriages and buggies.

1357 SAYRES & SCOVILL, 51 to 61 Colerain ave., city; buggies and carriages.

1358 HIRAM W. DAVIS & CO., Flint st., between Denman and Freeman ave., city; carriages and buggies.

1359 JAMES & MAYER, 57, 59 and 61 Elm st., city; carriages and buggies.

1360 SECHLER & CO., 5th and Eggleston ave., city; carriages and buggies.

1361 THE GAINSFORD CARRIAGE CO., Eggleston ave. near 8th st., city; carriage and buggies.

1362 ANDERSON, HARRIS & CO., Freeman and Wade, city; buggies and carriages.

1363 THE STANDARD WAGON CO., 8th and Depot, city; buggies and carriages.

1364 THE FAVORITE CARRIAGE CO., 8th, Depot and Burns sts., city; buggies and carriages.

This brings you to the extreme northwestern end of the building, where you will encounter an elevator that will take you to the first

floor. Before going there, however, you retrace your steps, this time going east. On your right hand will be found exhibit—

1365 THE GEO. C. MILLER SONS CARRIAGE COMPANY, 19, 21 and 23 west 7th st., city; buggies and carriages.

Crossing the head of aisle, you reach exhibit—

1366 J. W. GOSLING, 6th and Sycamore sts., city; buggies and carriages.

Turning to the right at the beginning of the last mentioned display and going south on the aisle, you turn to the left into another aisle running at right angles to the one last mentioned, and on your right is exhibit—

1367 EASTON & CLARK, 164 and 166 w. 2d st., city; buggies and carriages.

1368 B. VEERKAMP & SONS, 469, 471 and 473 Walnut st., city; buggies and carriages.

1369 ANCHOR BUGGY CO., Freeman ave. and 9th st., city; buggies.

The above ends the carriage and buggy display, and at this point begins the harness exhibits. The first one on the same aisle and general location, is exhibit—

1370 THE BUCKEYE HAME TUG CO., 2 e. 3d st., city; hame tugs.

1371 J. O. KANE, 767 Market st., San Francisco, Cal.; the O. K. California horse boot.

1372 JULIUS ENGELKE, 376 Main st., city; hair lined harness pads, and pad housings, gig saddles, bridle fronts and saddlery.

1373 GRAF, MORSBACH & CO., 214 & 216 Main st., city; all kinds of harness.

1374 THE STANDARD HARNESS CO., 211 and 213 w. 5th st., city; saddles and harness.

1375 PERKINS, CAMPBELL & CO., 214, 216 and 218 Broadway, city; saddles and harness.

1376 P. WILSON'S SONS & CO., 719, 721, 723, 725, 727 w. 6th st., city; saddles and harness, saddlery hardware and wood hames.

This completes the display in this department, and the last exhibit finds you at the foot of the staircase directly opposite where you started in to view the carriage and buggy display on the northern side of the Hall. Ascending these steps, turn to the right and cross (east) to the front of the building, passing through the Textile Fabric Division that has been previously examined. Here you take the passenger elevator to the third story, Old Power Hall, where will be found the

EDUCATIONAL DEPARTMENT.

This is contained in several large rooms on the third floor of the northern part of the permanent portion of Springer Music Hall, and contains exhibits as follows:

- CINCINNATI PUBLIC SCHOOLS; display of drawings, graded written work, and botanical specimens.
 COVINGTON PUBLIC SCHOOLS; written work and drawings.
 NEWPORT PUBLIC SCHOOLS; drawings and written work.
 BELLEVUE, KY.; drawings.
 DAYTON, KY.; drawings.
 THE AVONDALE SCHOOL; school work and kindergarten.
 PUBLIC SCHOOLS OF GLENDALE; models of engravings, drawings and written work.
 BARTHOLOMEW'S PRIVATE SCHOOL; drawings.
 CASE OF STAMP COLLECTION, by Albrecht Leue.
 MARIETTA SCHOOL; penmanship, school work and drawing.
 CLEVELAND SCHOOLS; graded written work.
 FOSTORIA, O.; school work.
 CASE OF MAP ENGRAVINGS, by L. B. Folger.
 RICHMOND, IND.; drawings and school work.
 A. H. ANDREWS & CO., Chicago; school furniture, maps, etc.
 PHOTOGRAPHS of Educators and Presidents Boards of Education from 1829 to 1888.
 INTERESTING EDUCATIONAL DOCUMENTS from the Public Library.
 MEDALS, received by Cincinnati schools for efficiency.
 SAMPLES OF LETTER ENVELOPES, used during the war, by M. S. Turrill.
 NATURAL OBJECTS OF STUDY, for children in the Public Schools.
 APPLIANCES FOR TEACHING.
 CASE OF CHINA from the pupils of Miss Newton.
 PAINTINGS by pupils of Miss May Spencer, City.
 CARVED WORK by pupils of Miss Bentley.
 FEMALE COLLEGE, Millersburg, Ky.; paintings.
 FEMALE COLLEGE, Jessemine, Ky.; paintings by pupils.
 NELSON'S COLLEGE; specimens of school appliances.
 ST. MARY'S INSTITUTE, Dayton, O.; drawing.
 AMATEUR JOURNALS.
 SEARCY LEDGER, for accounts.

IN DEXTER HALL.

On the right of the door as you enter is exhibit—

1377 VAN ANTWERP, BRAGG & CO., Cincinnati, New York and Boston; school books and school appliances.

- 1378 ROBT. CLARKE & CO., 61, 63 and 65 w. 4th st., city; school appliances.
- 1379 CUVIER CLUB, 34 Longworth, city; four cases stuffed birds and animals.
- 1380 CINCINNATI SOCIETY NATURAL HISTORY, 108 Broadway, city; two cases natural history specimens.
- 1381 A. E. HEIGHWAY, city; fossils.
- 1382 OHIO HUMANE SOCIETY, city; specimens of implements of torture secured by the society.
- 1383 EBERBACH & SON, Ann Harbor, Mich.; chemical apparatus.
- 1384 M. A. SPENCER & CO., 195 and 197 w. 7th st., city; surgical and dental instruments.
- 1385 C. W. RIGGS, two case of mound relics.
- 1386 W. K. MOOREHEAD, Xenia, O.; eight cases of archeological specimens.

Leaving Dexter Hall, to the south, you enter a series of smaller rooms devoted in part to the

CATHOLIC EDUCATIONAL DEPARTMENT.

This includes drawing and hand work from pupils of Notre Dame Convent, Cincinnati, St. Xavier's and St. Ludwig's Parochial School, schools under the direction of Brothers of Mary; and Benziger Bros., of Cincinnati and Chicago, church goods.

In the room on the east are exhibits of school work, needle work, carvings, etc., of Notre Dame Convent, Reading, O.; Brown County Academy; Ursuline Convent at St. Martin's, Cedar Grove, O.; St. Edward's School; Freeman Avenue Convent; St. Patrick's School; St. Joseph's School; the Sisters of Mercy Exhibit of the inmates of the House of Refuge; table of School work from St. Mary's, Urbana, O.

Also in the same room with the above are—

The National Woman's Suffrage Association and International Council of Women; Women's Christian Temperance Union exhibits.

The above completes the Educational Department, and you are now near the head of a staircase leading to the lower floors. Passing down by the Art Gallery entrance, previously mentioned, you continue on to the first floor, and immediately on your left is the office of the Secretary. Turning to your left you pass the door of the office, take a few steps west, with the display of San Diego in your immediate front, you bear to the right and traversing an aisle for perhaps fifty feet, you find yourself in the spacious main corridor of Music Hall, main entrance. Still keeping due north, past the large doors leading to the

esplanade on your right and the entrance to the Music Hall auditorium on your left, you enter the

OHIO EXHIBIT,

Situated in the northeastern end of the permanent building. In this department will be found—

Pictures in oil and photographs of the pioneers of the Northwest Territory and of Hamilton County and Cincinnati.

Cases of pre-historic specimens and Indian relics from Ft. Ancient, O., by J. H. Harris of Waynesville, O.; from near Madisonville, O., by S. F. Covington of Cincinnati.

Mound Builders relics: collection of B. F. Dutton, Chester Hill, O.; collection of C. F. Low, Madisonville, O.; collection of Capt. B. F. Sayre, of Marietta, O.; collection of Millard H. Davis, Lowell, O.

Model of Ft. Hill, Highland county, O.

Model of Great Serpent Mound, Adams county, O.

Maps illustrating different sections of Ohio.

Collection of Indian relics by L. Simonton, Blanchester, O.

Photographs of pre-historic remains and Indian relics.

The Marietta Exhibit of relics that were displayed at the Marietta Centennial.

Cincinnati's Old Volunteer Fireman Exhibit.

Specimens of grain grown at the Ohio University at Columbus.

Cases containing scientific instruments used in Ohio University.

Numerous large cases of fossils, relics, shells, etc.

Early settlement, by Wall Kirkpatrick, Anna, Ill., showing the work of our pioneer fathers and mothers in settling lands.

On the right as you pass on is—

TOPOGRAPHICAL MAP OF OHIO.

(DESIGNED AND CONSTRUCTED BY ADOLPH LEUE.)

This map is located in the center of the Ohio Exhibits, and is justly the center of attraction there. Topographical maps are no novelty, but this one, which is universally pronounced a correct representation of the topography of Ohio, has features of its own—larger than any map ever made (it is 17 feet square), bold in its outlines, and not covered with too many names. It does not bewilder the eye. It furnishes just the information of which many people stand badly in need—the general aspect of the State—the flowing streams representing the principal water-courses of the State, and the burning gas, showing the location of the more important natural gas fields, give life to the whole. “It is the State in miniature, ingeniously carved out of stone,” as a visitor re-

marked. The fact, however, is that it is built of the same material as that of which our artificial stone pavements are made, cement and sand. About twenty barrels of Portland cement and twenty or more cart-loads of sand were used in its construction.

Buried just beneath the surface is the hydrant, which supplies the streams with water. It consists of a large lead tube about twenty-four feet long, from which numerous smaller tubes, which aggregate in length more than one hundred feet, branch out in every direction. Ordinary gas pipes also buried under the surface furnish the material to indicate the natural gas fields, of which there are six. It may be mentioned here that Mr. Leue is constantly besieged by people from various parts of the State in which gas has been discovered, asking him to indicate the existence of natural gas in their respective places.

The water-shed between the St. Lawrence and the Ohio Rivers, with its swamps or wet prairies is plainly shown, as are also the divides between the tributaries of the Ohio, the rocky and hilly portions of Eastern and Southern Ohio, along the Ohio River are well represented. "All of this," said Mr. Leue, "should be devoted to practical forestry."

Another interesting feature of the Map is the representation of the original land division of Ohio by colors; there is Symmes' purchase, the Ohio Company's purchase, the Virginia Military Land, the U. S. Military Land, the Western Reserve, the Fire Lands, and Congress Lands, which are explained by a legend in the southeast corner of the Map.

Exhibit of Forestry Department.

Specimens of Ohio wood and coal.

Old Ft. Washington, with numerous early pioneer relics in the rear.

Mill stone used in Ft. Harmar in 1790.

Flag of the Confederation of States, 1790.

Ohio Penitentiary Exhibit.

At the last mentioned exhibit you pass under an archway made in the partition between the Ohio State Exhibit and the balance of this large hall, formerly known as Power Hall. The exhibits in this sections are—

1387 THE D. B. BAYLESS STOVE COMPANY, 181, 183, 185, 187
w. 5th st., city; stoves, etc.

The above exhibit embraces nearly all the space on the eastern end of this Hall. But adjoining it on the north is exhibit—

1388 A. LOTZE SONS, 219 Walnut st., city; hot air furnaces, wrought steel ranges, school room stoves.

This exhibit is located for the most part along the northern wall. Next, on the right, is exhibit—

- 1389 F. & L. KAHN BROS., Hamilton, O.; stoves.
- 1390 BRADLEY, BARKER & CO., Allegheny City, Pa.; automatic gas governor.
- 1391 C. H. BENNETT, 552 and 554 w. 6th st., city; furnaces and ranges.
- 1392 THE CASTLE ENGINE CO., Indianapolis; steam engine.
- 1393 CHAS. JACKSON, California, O.; machine-made sheet metal pans.
- 1394 AMERICAN METER CO., 177 Elm st., city; gas stoves and gas meters.
- 1395 QUEEN CITY ELECTRIC CO., 58 and 60 Longworth, city; incandescent and arc lighting, and electric motor power.
- 1396 BALL ENGINE CO., Erie, Pa.; automatic cut-off engines.
- 1397 HOOVEN, OWENS & RENTSCHLER, Hamilton, O.; Corliss engine.
- 1398 STUART & ALTENBERG, 92 w. 4th st., city; the Edison light dynamos.
- 1399 PAUL BROS., Glen Este, O.; scroll sawing.
- 1400 JOHN WEAVER, 14 Water st., city; Benjamin Stoneware Co.'s stoneware.

Here you have reached the extreme western end of the Hall, and are just inside the door leading into Machinery Hall. On your left is exhibit—

- 1401 JAS. MURDOCK, JR., 52 Longworth st., city; stamp cutter and engraver and die sinker.
- 1402 CONSOLIDATED OIL AND TANK LINE CO., city; oils.

Obliquing to the right you are in front of the office of Mr. Jas. Anspaugh, Superintendent of the Machinery Department of the Centennial Exposition, with a staircase leading to the second story. Bearing to the left, the first on your left side is exhibit—

- 1403 THE JOHN VAN RANGE CO., 169 Elm and 6 and 8 Home sts., city; hotel and family ranges.

Immediately to the east of the last mentioned display is the exhibit of—

- 1404 GEO. T. SMITH, MIDLINGS PURIFIER CO., Jackson, Mich.; model complete flour mill, capable of turning out seventy-five barrels of flour per day.

Starting east on an aisle, beginning at the office of Mr. Anspaugh, with a door on your right leading to the north area between Old Power

Hall and Music Hall, on either side are exhibits. On the left is exhibit—

- 1405 WM. RESOR & CO., State ave., n. of Gest st., city; stoves and ranges.
- 1406 THE WM. MILLER RANGE & FURNACE CO., 9 and 11 w. 5th st., city; stoves and ranges.
- 1407 N. K. AYLWARD, 436 w. Court st., city; hot water boilers.

The above completes the display in this Hall. You have now reached a door on your right which leads to the area between Power Hall and Music Hall. Exhibits are found here also, as follows:

- 1408 THE JEFFREY MANUFACTURING CO., Columbus, O.; chain belting.
- 1409 J. W. M. STEWART, 82 w. 3d st., city; the Johnson county, Ky., cannel coal.
- 1410 THE NONSUCH STOVE POLISH CO., Detroit, Mich.; stove polish.
- 1411 F. BAUER, 376 Elm st., city; artificial stone.
- 1412 CARL BEUTTEL; patent pavements.
- 1413 THE MARMET COAL CO., city; coal.
- 1414 WARREN SCHARF ASPHALT PAVING CO., city; pavements.
- 1415 THE WEIR FROG CO., city; railroad frogs.
- 1416 U. G. BLANEY, city; warm air furnaces.
- 1417 THE CINCINNATI OIL FUEL CO., city; oil fuel machines.
- 1418 THE F. C. DECKEBACH SONS CO., 165 to 171 w. Court, and 324 and 326 Elm st., city; steam copper and brass works.
- 1419 J. DARLING, city; rotary engine boiler and smokeless furnace.
- 1420 LOVE & CO., city; Heeson improved furnace grates.

You are now at the extreme end of the north area, which leads into Machinery Hall. Having examined Machinery Hall you retrace your steps for the distance of twenty feet, and ascend a staircase on your right which leads into the north corridor of Music Hall. The first display on the right is exhibit—

- 1421 F. TETTENBORN, 114 and 116 w. 5th st., city; household goods.

Obliquing to the left, on your right is exhibit—

- 1422 COLEMAN'S GAS WORKS MANUFACTURING CO., 9 w. 7th st., city; furnaces and gas machines.
- 1423 THE AMERICAN COMPOSITION FUEL CO., 5th and Elm sts., city; patent foot warmer.
- 1424 S. NEWMAN, 64 Main st., city; metal show window fixtures.
- 1425 MOSES & LUSTER, 381 Bond st., Cleveland; The Only Perfect washing machine.

- 1426 C. R. TALBOTT CO., 1 and 2 Wiggins Block, city; nails from the La Belle Iron Works.
- 1427 ST. LOUIS STAMPING CO., St. Louis, New York, Chicago, Boston; granite iron ware.
- 1428 THE C. R. TALBOTT CO., city; American Enamel Co., limited, wire goods.

By this time you have reached the eastern end of the north corner of Music Hall. By turning to your right and proceeding a short distance you would be in front of the entrance to the auditorium. But instead of going in that direction, keep due east and you will find yourself on the front steps overlooking Elm Street. Immediately on your front on the esplanade is exhibit—

- 1429 JOHN STEPHENSON CO., New York City; cable car No. 135, made for the Mt. Adams and Eden Park Inclined Railway Co., city; Geo. B. Kerper, President.

Proceeding north, perhaps fifty feet, as you turn from the last mentioned exhibit you face—

THE WEST VIRGINIA EXHIBIT,

Which is in a frame annex built especially for this display. It contains West Virginia oils, Indian relics found in the State; wool, woods, coal, coke, pig iron, salt, lime, fire clay, brick, wheat corn, oats, flour, limestone.

Coming out again from the West Virginia exhibit, on your right is an entrance to Old Power Hall, in the lobby way of which you will encounter the display of the Old Volunteer Firemen of Cincinnati. Entering the door immediately in your front, you are again in the apartment of the Ohio Exhibit previously mentioned. Leaving this, turning due south and passing across the main lobby in front of the several entrances to the Music Hall auditorium, and toward the Secretary's office and Horticultural Hall, you come to the south area between Music Hall and Horticultural Hall. Descending eight steps the first on your left is exhibit—

- 1430 ALFRED WHITE, 255 and 257 w. 5th st., city; marble and monumental work.
- 1431 F. O. CROSS, Chicago, Ill.; rustic vases and monuments of free-stone.
- 1432 THE SOUTHERN GRANITE CO., city; monumental and paving granite.
- 1433 C. F. KLEPPER, 76 and 78 w. Court st., city; aviary and aquarium.

On the right, opposite the last mentioned exhibit, is an Exposition aquarium under the charge of Hugo Mulertt, city.

1434 F. L. SCHROERLUCKE, 215 Walnut st., city; birds and bird cages.

Next, on the same side, is a newspaper stand of Henry Kling, city.

1435 G. W. HOWELL, Covington, Ky.; rain-water cut off.

1436 G. G. WRIGHT, 50 Longworth st., city; stencil cutting, engraving and die sinking.

1437 BROWDER, MORRISON & CO., Greenfield, O.; fire escape.

1438 THE HOWELL WHEEL CO., Covington, Ky.; metal wheels.

1439 WARD BROTHERS, Columbus; O.; souvenir albums.

1440 THE WATER ELEVATOR AND PURIFIER CO., 443 Plum st., city; cistern bucket pumps.

1441 THE NOWOTNY MANUFACTURING CO., Ohio River, foot of Broadway, city; scrub brush attachment for hydrant hose.

1442 ST. LOUIS FIRE ENGINE CO., St. Louis, Mo.; hand fire engines.

1443 T. GALLAT, 245 w. Liberty st., city; patent catch basin.

By retracing your steps a few feet on your right will be found the steps leading to the refreshment saloon at the western end of Horticultural Hall. On your left are corresponding steps leading to south corridor of Music Hall.

MACHINERY HALL.

Beginning at the northeast corner of the Hall, just at the foot of the steps leading to the Pavillion in which is the Foss-Schneider Co.'s beer hall is—

SECTION A.

1 LEOPOLD STEIGERT, 110 Elder st., city; butchers' supplies, engines, cutters, etc.

2 C. SCHMIDT & CO., 568-572 John st., city; butchers' supplies and hardware.

3 S. ESPACH, 473 Linn st., city; steam horse-shoe machine.

4 THE ECLIPSE PUMP CO., 141, 143 W. 2d st., city; steam pumps.

5 CHARLES BARNES & CO., 140 Sycamore st., city; dynamos and engines.

6 THE JOHN H. MCGOWAN CO., 42-46 Central ave., city; steam pumps.

- 7 THE GORDON-MAXWELL CO., Hamilton, Ohio; steam pumps.
 8 LAIDLAW & DUNN CO., s. e. cor. Pearl and Plum sts., city; steam pumps.
 12 THE CHRISTIAN MOERLEIN BREWING CO., 676 Elm st., city; special exhibit.
 13 THE CHRISTIAN MOERLEIN BREWING CO., 676 Elm st., city; bottling department.

SECTION B.

- 14 WEBER BROS. & CO., 25th ward, city; patent belt holder.
 16 C. C. McBRAIR, care of Strobridge Lithographing Co., city; patent lithographing and engraving machine.
 18 JAS. ROBINSON & CO., 225-229 W. 2d st., city; metal working machinery.
 20 AMERICAN WELL WORKS, Aurora, Ills.; diamond drills, for driving wells and mining.
 24 CINCINNATI SPHERICAL BALL CO., 224 Laurel st., city; metal ball grinding machines.
 26 THE ANDREWS SOAP CO., 226 Spring Grove ave., city; toilet soaps.
 28 WM. KIRKUP SONS, s. e. cor. Ludlow and Pearl sts., city; brass goods and piping.
 30 SEBASTIAN, MAY & CO., 2d and Plum sts., city; lathes.
 35 CORDESMAN MACHINE CO., Butler st. opp. Little Miami R. R. depot, city; wood-working machinery.
 37 P. PRYIBEL, New York; wood-working machinery.
 39 FOSDICK & PLUCKER, 6th and Culvert sts., city; drill presses.

Turning back a few steps and going to the right, traversing a short aisle, you find on the corner the exhibit No.—

- 42 THE EGAN CO., 232-250 W. Front st., city; wood-working machinery.

As you turn the eastern corner of the above display you are immediately opposite exhibit No.—

- 45 ABDENROTH & ROOT, 28 Cliff st., New York, also 64 Johnston bldg., city; safety boilers.

Here, on your left, is the north area of the Music Hall building, in which are two exhibits belonging to the Machinery Department, viz;—

- 47 HEASON GRATE CO., 11 S. Frederick st., Baltimore; furnaces.
 51 JEREMIAH DARLING, 240 E. Pearl st., city; boiler compounds.

Returning to machinery hall proper, you find on your left, exhibit
 61 F. LUNKENHEIMER, 15, 17 E. 8th st., city; brass goods.

You have now reached the first main cross aisle, opposite the north corridor of the Music Hall building. Immediately in your front is one of the main driving engines used in propelling the machinery in Machinery Hall. It is furnished by I. & E. Greenwald, 248 E. Pearl st., city, and drives the shafting in the north half of Machinery Hall, which is the first exhibit in

SECTION C.

Crossing diagonally to the left you strike a small aisle to the east of the Greenwald driving engine. On your left is exhibit—

- 65 B. VAN DUZEN & BRO., 196 E. Front St., city; gas engines.
- 66 VANDUZEN & TIFT, 102, 104 E. 2d st., city; steam jet pumps.

Another short aisle is reached, on the face of which is exhibit—

- 71 PEARCE, ATKINS & CO., 114 W. 2d st., city; driving bands for engines.

Here is another aisle, striking about the center of the Greenwald driving engine. Taking a few steps south, on the left, you find exhibit

- 75 THOMAS BUCHANAN & CO., 53 W. 2d st., city; emery wheels, machinery, and gold, silver and nickel plating supplies.

Opposite the last mentioned are two exhibits of—

- 77 POST & CO., Elm and Pearl sts., city; iron-working machinery and machinists' supplies.

This exhibit reaches to another cross aisle, at the intersection of which is exhibit—

- 78 THE REVERE RUBBER CO., Boston, Mass.; rubber belting, etc.

Next on the left, the same side as the Revere Co., is exhibit—

- 81 THE BRADFORD BELTING CO., 2d and Walnut sts., city; leather belting, packing, and machinists' supplies.
- 83 THE MILBURN GIN AND MACHINE CO., Memphis, Tenn.; independent wood split pulley.

Opposite the above is another exhibit—

- 85 POST & CO., Elm and Pearl sts., city; iron-working machinery.
- 87 FAIRWEATHER & LADEW, New York city; belting and packing.
- 89 NEW YORK BELTING & PACKING CO., New York; belting and packing.

This brings you to one of the dummy engines that furnishes power to the machinery, exhibit—

- 91 LANE & BODLEY CO., southeast corner John and Water sts., Cincinnati; compound condensing Corliss engine, which drives the shafting in the south end of the machinery building, east side.

Passing to the left, you get on an aisle and walk between the great driving wheel of the Lane & Bodley Corliss engine, and on your left is exhibit—

95 PHIL CAREY & CO., 279 Broadway, Cincinnati; pipe covering, asbestos and cylinder packing.

At this point you reach the doorway to the south corridor of the Music Hall Building. To the south of the broad aisle leading from the door above mentioned, and on the south side of the door, is exhibit—

97 WM. LEMON, Cincinnati; grained woods.

To the right of the Lemon display is exhibit—

101 THE UNIVERSAL RADIAL DRILL CO., N. E. corner 3d and Eggleston ave., Cincinnati; machine tools.

On the east end of the above exhibit is a large doorway leading into the south area between the Music Hall Building and Horticultural Hall. Retracing your steps to the broad aisle you pass west, with the Lane & Bodley engine on your right. Turning north (or to your left) a few feet, you encounter exhibit—

110 LODGE, DAVIS & CO., 6th and Culvert sts., Cincinnati; iron and brass working machinery.

The above exhibit extends 128 feet, embracing all the space on the main aisle, between the Greenwald and the Lane and Bodley driving engines.

This concludes Section C, Machinery Hall.

SECTION D.

Beginning on the small eastern aisle which starts south about the center of the Lane & Bodley engine, the first display on your right is exhibit—

114 THE NILES TOOL WORKS, Hamilton, O.; machine tools (44 feet).

Opposite is exhibit—

116 THE CINCINNATI SCREW AND TAP CO., 2d and Plum sts., Cincinnati; milling machinery.

118 THE QUEEN CITY ELECTRIC LIGHT CO., 68 Longworth st., Cincinnati; dynamos and motors.

On the right, opposite, is exhibit—

121 LONG & ALSTATTER, Hamilton, O.; punching and shearing machinery.

Opposite, is exhibit—

- 124 THE HEINE SAFETY BOILER CO., New York City; safety boilers.
 128 P. BILLINGHAM, Trenton, N. J.; mince-meat machinery.
 131 JOSEPH SHARP, 59-61 Walnut st., Cincinnati; leather belting and hose.
 134 RITCHIE & DYER, Hamilton, O.; road engines, &c.

The above is on the south side of a cross aisle, which you have now gained. Turning to the right toward the canal, you reach the main aisle. Passing the Ritchie & Dyer display above mentioned, the first display in

SECTION E.

Noticed, is exhibit—

- 137 GREENLEE BROTHERS & CO., Chicago, Ill.; wood-working machinery.
 139 S. OBERMAYER FOUNDRY SUPPLY CO., west side of Evans st., south of 8th st., Cincinnati; foundry facing machinery mills, and foundry facings.
 145 CORDESMAN, MYER & CO., 29 Butler st., Cincinnati; wood-working machinery.

At this point is a cross aisle, which you traverse, turning to the left a few steps, when you reach another aisle leading south. On the left of this is exhibit—

- 147 H. H. WALKER, 107 W. 2d st., Cincinnati; emery wheels, etc.
 149 CHAS. SEYBOLD, 107 south Canal st., Cincinnati; book-binding machinery.
 151 THE GEO. F. CARD ELECTRIC LIGHT CO., S. E. corner 2d and Plum sts., Cincinnati; electric motors.
 153 J. H. DAY & CO., Court, Broadway and Eggleston ave., Cincinnati; sifters, etc.
 155 THE JEFFREY MANUFACTURING CO., Columbus, O.; chain elevators, and chain belting and mining machinery.
 159 HENRICHSON & BRO., 389 Vine st., Cincinnati; butchers' supplies.
 161 Q. J. MILLER, Harrison ave. and Brighton Station, Cincinnati; grinding machinery.
 165 THE QUEEN CITY OIL CO., 65 E. Front st., Cincinnati; machine and other oils.
 167 M. HELFLISCH, 264 W. 6th st., Cincinnati; orange wood turning.

You have now reached the end of the east aisle of Machinery Hall, having passed on your right the large stairs leading to the South Pavil-

lion. Coming back, perhaps fifty feet, you turn to the left and ascend the stairs leading both to the South Bridge and the South Pavillion. Taking the stairs south of the bridge proper, mounting eight steps, the Pavillion is reached. Just before ascending the top-most flight of steps leading to the South Pavillion, you find on your left exhibit—

169 THE SINGER MANUFACTURING CO., corner 5th and Race sts., Cincinnati; different styles of manufacturing sewing machines.

The first display on the left of the

SOUTH PAVILLION

Is exhibit—

175 ALBIN WARTH, Stapleton, New York; cloth cutting machinery.

On the same side of the broad aisle is exhibit—

177 THE COBURN WHIP CO., Windsor, N. Y.; whips, lashes, etc.

179 A. CHESTER, 50 Washington st., Patterson, New Jersey; silk weaving.

181 ANDERSON & CO., Minneapolis, Minn.; silk weaving.

185 THE SHAW STOCKING CO., Lowell, Mass.; stocking looms.

189 REECE BUTTON HOLE MACHINE CO., Boston, Mass.; button hole machines.

By this time you have reached the location of the Foss-Schneider Brewing Company, 279-297 Freeman ave., Cincinnati, in the center of the South Pavillion. This firm have a fine display of bottled beer. The display includes an octagon shaped platform surmounted by pillars and an immense cask, on top of which is a figure (heroic size) of King Gambrinus. Passing in front of this, and to the left, are the ante rooms and counters of the cafe and restaurant of Henry Sayers & Co., of St. Louis. No regular meals are served here, but cold lunch with coffee can be obtained. Keeping on around the big cask of the Foss-Schneider Co.'s display, you reach the extreme southern end of Machinery Hall Pavillion, a large arched window which overlooks 12th street and the bend in the canal at Plum street. On either side of the building at this point are doors of exit and entrance to and from 12th street. Passing the western door and going north, on your left is exhibit—

201 L. B. ROFF, 1670 and 1672 Eastern Avenue, Cincinnati; dessicating and cremation closet.

In close proximity to the office of the above exhibitor, you pass the staircase leading to the southwest tower of the building. Coming back north, with the big cask on your right, you face the exhibit—

228 MABLEY & CAREW, Fountain Square, Cincinnati; manufacture of clothing.

Next on the left is exhibit—

230 ANDERSON BROS., Patterson, N. J.; silk weaving.

Here is the Gas Engine furnished by B. Van Duzen & Bro., of Cincinnati, which furnishes the power for the shafting in the South Pavillion.

Adjacent thereto, is exhibit—

234 UNDERWOOD WHIP CO., Wooster, O.; process of covering whips.

238 FLEXIBLE WIRE MAT CO., N. E. corner 8th and Depot st., Cincinnati; steel mat weaving machinery.

This ends the exhibits in the South Pavillion, and here you have reached the steps leading from the Pavillion to the west side of Machinery Hall. Having descended the steps you reach

AGRICULTURAL HALL.

You turn directly to the left, and ignoring the display on your right, for the present, you go south, and immediately in the rear of the staircase is exhibit—

242 THE STUDEBAKER BROS. MANUFACTURING CO., South Bend, Ind.; wagons of various kinds.

246 CLEVELAND DRYING CO., Cleveland, O.; commercial fertilizer.

248 GEO. ERTEL & CO., Quincy, Ill.; hay presses.

252 THE JOHN STEVENSON CO. (limited), New York City; train grip-cars.

Obliquing slightly to the right you pass beneath the floor of the South Pavillion and traverse the main aisle and take the display on the left as you go down. The first exhibit is—

254 HOUSER, KRAMER & CO., 872 Central Avenue, Cincinnati; cooperage.

256 CINCINNATI COOPERAGE CO., Lower River Road, Cincinnati; cooperage.

258 JAS. KIDNEY, 121 E. 2d st., Cincinnati; wagons.

260 UNION WAGON CO., 749-751 Central Ave., Cincinnati; wagons.

You are now in the extreme southern corner of the Machinery Hall Building, and have inspected all the displays on the left hand side in coming from the staircase south. Turning directly to the right you retrace your steps and view the exhibits along the west wall of the building. The first on the extreme southern end is exhibit—

265 PHILIP SCHOENBERGER, 822 Freeman ave., Cincinnati; ice wagons.

269 GEO. ROSS, Petrolia, Ill.; sulky plows.

- 273 CORNELIUS & FENDRICK, Evansville, Ind.; grub and stump extractor.
- 277 DETWILER & RUPPERT, Lewiston Pa.; egg preserving crate.
- 279 T. B. CHAMBERLAIN, Middletown, Ohio; fence machine, etc.
- 283 JOS. GASDORF, Cincinnati; combination drill.
- 285 M. D. KENDALL, Paris, Tenn.; bean and pea huller.
- 289 STITES & CO., 1590 Eastern ave., Cincinnati; iron measures and buckets.
- 281 DR. S. P. CREAGER, 1464 Wabash ave., Chicago, Ill.; horse and cattle food.
- 295 STANDARD MANUFACTURING CO., 578 W. 6th st., Cincinnati; fence making machines.
- 301 GENNESSEE VALLEY MANUFACTURING CO., Mt. Morris, N. Y.; agricultural implements.
- 309 THE HERCULES MANUFACTURING CO., Cardington, O.; wheat cleaning machinery.
- 317 THE RED JACKET PUMP CO., 175 Plum st., Cincinnati; Red Jacket pumps.
- 321 HUBBARD & HARRIS, Union Stock Yards, Cincinnati; patent gate.
- 325 J. B. PARKER, Ripley, O.; tobacco presses.
- 329 WM. STONEBRAKER, Hagerstown, Ind.; hominy mills.
- 335 J. M. McCULLOUGH'S SONS, 134-136 Walnut st., Cincinnati; seeds.

You have now reached again the steps leading to the South Pavilion. Directly in front of the foot of the steps is exhibit—

- 338 THE EAGLE MANUFACTURING CO., Lancaster, O.; hay and stalk cutters.

On the left—

- 339 J. WILDER & CO., 159-161 W. 6th st., Cincinnati; agricultural implements.
- 342 THOMPSON & CO., Cincinnati; mechanical cow; ice cold milk drawn from a cow. (A privilege.)
- 347 MAST, FOOS & CO., Springfield, O.; wind engines.
- 348 THE IOWA FARMING TOOL CO., Ft. Madison, Iowa; farm and garden tools.
- 353 THE ADVANCE MANUFACTURING CO., Hamilton, O.; cider mills.

You have reached a cross aisle. Turning to your right you traverse the main aisle, which from this point reaches to the 14th street Bridge, all the displays being on your left. The first is exhibit—

- 357 LONG & ALLSTATTER, Hamilton, O.; agricultural implements.
- 359 KILBURN & JACOBS MANUFACTURING CO., Hamilton, O.; earth moving implements.

363 WM. N. WHITELEY CO., Springfield, O.; steel binding harvester.

At this point begins, including 124 feet, exhibits—

365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391 and 393 HARMEYER & CO., 227 Walnut st., city; agricultural implements of various kinds, including mowing machines, reapers, lawn mowers, farm and grist mills, sulky plows, sulky rakes, plows and cultivators, grain drills, farm wagons, road carts, churns and creamers.

Adjoining the Harmeyer display and immediately opposite the bridge that leads from the south corridor of Music Hall, is exhibit—

401 THE CYCLONE PULVERIZER, 115 Broadway, N. Y.; cyclone pulverizer.

405 THE RICHMOND CHECK ROWER CO., Richmond, Ind.; fence machines.

405 THE AULTMAN & TAYLOR CO., Mansfield, O.; traction engines.

409 RUSSELL & CO., Massilon, O.; traction engine and thresher.

415 CHAMPION MACHINE CO., Springfield, O.; harvesting machines.

419 CHAMPION BAR & KNIFE CO., Springfield, O.; cutting machines.

423 CHAMPION MALLABLE IRON CO., Springfield, O.; iron and steel castings.

427 C. B. COTTERAL & SONS, New York City; printing presses.

On these presses the *Official Guide and Program of the Centennial* were printed, by John F. C. Mullen, publisher.

431 FOOS MANUFACTURING CO., Springfield, O.; grinding mills.

437 JOHN C. NYE, Falmouth, Mass.; seed planters.

439 CROWN MANUFACTURING CO., Phelps, New York; grain drills and fertilizers.

443 CINCINNATI ICE MACHINE CO., McLean ave. 8th and 9th sts., Cincinnati; ice machines.

447 A. W. STRAUB & CO., 3737 Filbert st., Philadelphia, Pa.; feed grinding machines.

451 WHITELEY REAPER CO., Springfield, O.; reaping and mowing machines.

455 SPRINGFIELD ENGINE CO., Springfield, O.; agricultural implements and portable engines.

At this point you will encounter the

JAMES REIS AUTOMATIC HIGH SPEED ENGINE, from Pittsburgh, Pa., which furnishes the power for the west side of the canal building, in both the agricultural and mechanical departments. It is within ten feet of the permanent bridge crossing the canal at 14th street. Next to the Reis Engine is exhibit—

459 F. M. CLARKSON, New York City; steam heater.

- 463 JAMES RYAN, 19 W. 4th st., Cincinnati; glass engraver (by power).
 467 E. D. SHAY & CO., 116 W. 2d st., Cincinnati; blacksmith and factory supplies.

Opposite the Shay display, against the steps of the 14th street bridge is exhibit—

- 472 LORE & CO., 238-240 W. Pearl st., Cincinnati; pipe covering, etc.

Next, on the same side, is exhibit—

- 476 WALTER M. THOMPSON, 77 E. 2d st., Cincinnati; boiler compounds, etc.

On the left is exhibit—

- 479 MONARCH AUTOMATIC GRAIN SCALE CO., 66 Longworth st., Cincinnati; grain scales.
 481 JAMES LOCKER, Decatur, Ill.; grain scales and elevator.

To the right, again, is exhibit—

- 486 THOMPSON & CO., Cincinnati; automatic cew. (A privilege.)
 488 J. H. MULLIGAN, Springfield, O.; hulled peanuts. (A privilege.)
 491 SCHAFFER & BUDENBERG, New York City; engine and boiler appliances.
 495 SPANENBERG ELECTRIC LIGHT CO., 4th ave. and Straight st. (Camp Washington), Cincinnati; incandescent light dynamos, etc.
 498 EDINBURG PULLEY CO., Edinburg, Ind.; wood split pulleys.

SECTION K.

- 501 RICHMOND MACHINE WORKS, Richmond, Ind.; saw mill machinery.
 505 BRADFORD MILL CO., Evans and 8th sts., 21st Ward, Cincinnati; mill machinery.
 509 THE HAUSS ELECTRIC LIGHT CO., N. E. corner Walnut and Canal, Cincinnati; electric lighting machinery.
 515 THE WALKER MANUFACTURING CO., Cleveland, O.; power transmitting machinery.
 519 JOHN SCHNEIDER & SON, 526-528 Walnut st., also 155-159 Clay st., Cincinnati; bakers ovens.
 521 CINCINNATI BUTCHERS' SUPPLY CO., 993-997 Central ave., Cincinnati; butchers and packers supplies.
 525 CHAS. REIF, 644 Vine st., Cincinnati; sausage machinery and manufacture of sausages.

You have now completed the Machinery and Agricultural Departments, and the last exhibit brings you to the western steps leading to the immense refreshment pavillion of The Foss-Schneider Brewing Co., of Cincinnati, located in the North Pavillion.

ART DEPARTMENT.

The Commissioners of the Cincinnati Centennial Exposition, at a meeting held on the 25th of June, 1888, passed a resolution expressing thanks to Mrs. A. A. Thomas, Mr. Geo. I. Seney and Mr. Calvin S. Brice, of New York city; Gov. R. A. Alger, of Detroit, Mich.; Mr. James J. Hill and Mr. Robert Mannheimer, of St. Paul, Minn.; Mr. Benjamin H. Warder, of Springfield, Ohio; Mr. George M. Pullman, Mr. Charles Hutchinson and Mr. Henry C. Wicker, of Chicago, Ills., and Mr. Charles H. Kellogg, Jr., Mr. Wm. Hooper, Mr. C. C. Waite, Mr. David Gibson, Mr. Alexander McDonald, Col. L. Markbreit, Mrs. F. Hassaurek, Mr. H. C. Ezekiel, Mr. George McLaughlin, Mr. H. Stern, Mr. Charles Fleischman and Mr. Alfred Seasongood, of Cincinnati, for the loan of valuable paintings for the Art Gallery.

ARTISTS AND THEIR PAINTINGS.

- ANDREWS, E. F., Washington. Chrysanthemums. The Swallows. La Petite Irma.
- ARTER, J. C., Paris. Study from Life in Picardie, France. Peasant Gardeners, Aisne, France.
- AUBERT, JEAN ERNEST, Paris. Lesson in Harmony.
- BENJAMIN-CONSTANT, JEAN JOSEPH, Paris. Salome. Justinian and his Court.
- BIERSTADT, ALBERT, (N. A.), New York. Sea Lions, Farallon Islands, on the coast of California.
- BONHEUR, M^{lle}. MARIE ROSA, Paris. Sheep in the Highlands. Charolais Bull.
- BOUGUEREAU, WILLIAM ADOLPHE, Paris. The Pomegranate Seller. Ready for the Bath. Mother's Delight. Mother's Loye. Happy Hours.
- BRIGGS, WARREN C., New York. Sunshine and Shadow.
- BARTLETT, C. D., Cincinnati. Portrait of W. H. Bellows. Portrait of a Lady.

- BREDIN, CHRISTINE S., Cincinnati. Elaine. Please give me one.
- BRIDGMAN, FREDERICK ARTHUR, (N. A.), Paris. A, B, C.
- BOUGHTON, GEORGE HENRY, (N. A., A. R. A.), London. Resting.
The Rose.
- BILLET, PIERRE, Paris. Gleaner.
- BRAITH, ANTON. Sunday Morning.
- BEARD, JAMES H., (N. A.), New York. Portrait of General Sherman. It's very Queer, isn't it?
- BROWN, JOHN G., (N. A.), New York. My Country, 'tis of Thee.
- BERTEAUX, HIPPOLYTE DOMINIQUE, Paris. Le Camarade de l'Atelier.
- BRETON, JULES ADOLPHE, Paris. Evening: The Weeder.
- CALAME, ALEXANDRE, Geneva. Landscape.
- CHAUVEL, T., Paris. Landscape.
- COROT, (Jean Baptiste) CAMILLE. Landscape. Le Pecheur (The Fisherman). Sunset. Andrassey.
- CABANEL, ALEXANDRE, Paris. Ophelia. Rebecca at the Well.
- CAZIN, JEAN CHARLES, Paris. Landscape.
- CEDERSTROEM, Baron GUSTAV OLAF, Paris. The Inattentive Pupil.
- DEFREGGER, FRANK VON, Munich. First Love Letter.
- DEWEY, CHARLES MELVILLE, New York. Sunset.
- DELACROIX, AUGUSTE, Paris. Tiger and Serpent.
- DIAZ DE LA PENA, N. V., Paris. Sultana. Forest of Fontainebleau. Monarch of the Forest. The Bathers. Storm. Seraglio. Bohemians.
- DUPRE, JULES, Paris. Three Trees. Marine. On the Banks of the Seine. Holland.
- DAUBIGNY, CHARLES FRANCOIS, Paris. On the Banks of the Oise. Gray Day.
- DETAILLE, EDOUARD, Paris. Manœuvres of the Blue Huzzars. The Standard Bearer. Autumn Manœuvres.
- DESCHAMPS, LOUIS, Paris. Child Reading.
- ENCKE, FEDOR, Berlin. Roman Peasant. Italian Brigand.
- EDÉLFELT, ALBERT, Paris. Girl Knitting.
- FARNY, HENRY F., Cincinnati. The Unexpected Visitor.
- FROMENTIN, EUGENE, Paris. Surprise in the Desert. Street in Algiers. Borders of the Nile.

- FRERE, (Pierre) EDOUARD, Paris. Mother's Love.
- FUECHSELL, HERMANN, New York. Hunters in Camp.
- GEROME, JEAN LEON, Paris. The First Kiss of the Sun.
- GUDE, HANS FREDERICK, Duesseldorf. The Mountain Torrent.
- GOLZ, ALEXANDER D., Vienna. The Arm-Seller of Tunis.
- HARBURGER, EDMUND, Munich. Poet and Publisher. The Widow.
- HARNETT, WILLIAM M., New York. Ease. The Student's Den.
- HAGBORG, AUGUST, Paris. Gleaners.
- HASS, MAURITZ FREDERICK HENDRICK DE, New York. Sunset at the Isle of Shoals. Moonlight on the Coast of Holland.
- HART, JAMES M'DOUGAL, (N. A.), New York. Homeward Bound.
- HART, WILLIAM, (N. A.) New York. Passing Shower.
- INNESS, GEORGE, (N. A.), New York. Passing Shower.
- ISABEY, EUGENE, (Louis Gabriel), Paris. Marine. Message of Cupid to the Graces.
- ISRAELS, JOSEF, The Hague. Mussel Woman. On the Shore.
- JIMINEZ, LOUIS, Paris. The Shepherdess.
- JEANCON, BLANCHE E., Paris. Study from the Model. Head of a Girl.
- JACQUE, CHARLES EMILE. Paris. Morning. The Morning Call. Sunshine and Shade.
- JACQUET, JEAN GUSTAVE, Paris. Diana.
- KOWALSKI VON WIERUSZ, ALFRED, Munich. Night Ride in Russia.
- KNIGHT, DANIEL RIDGEWAY, Paris. Harvest Time.
- KNAUS, LUDWIG. Sweet Sixteen. Youth and Sunshine. The Poacher.
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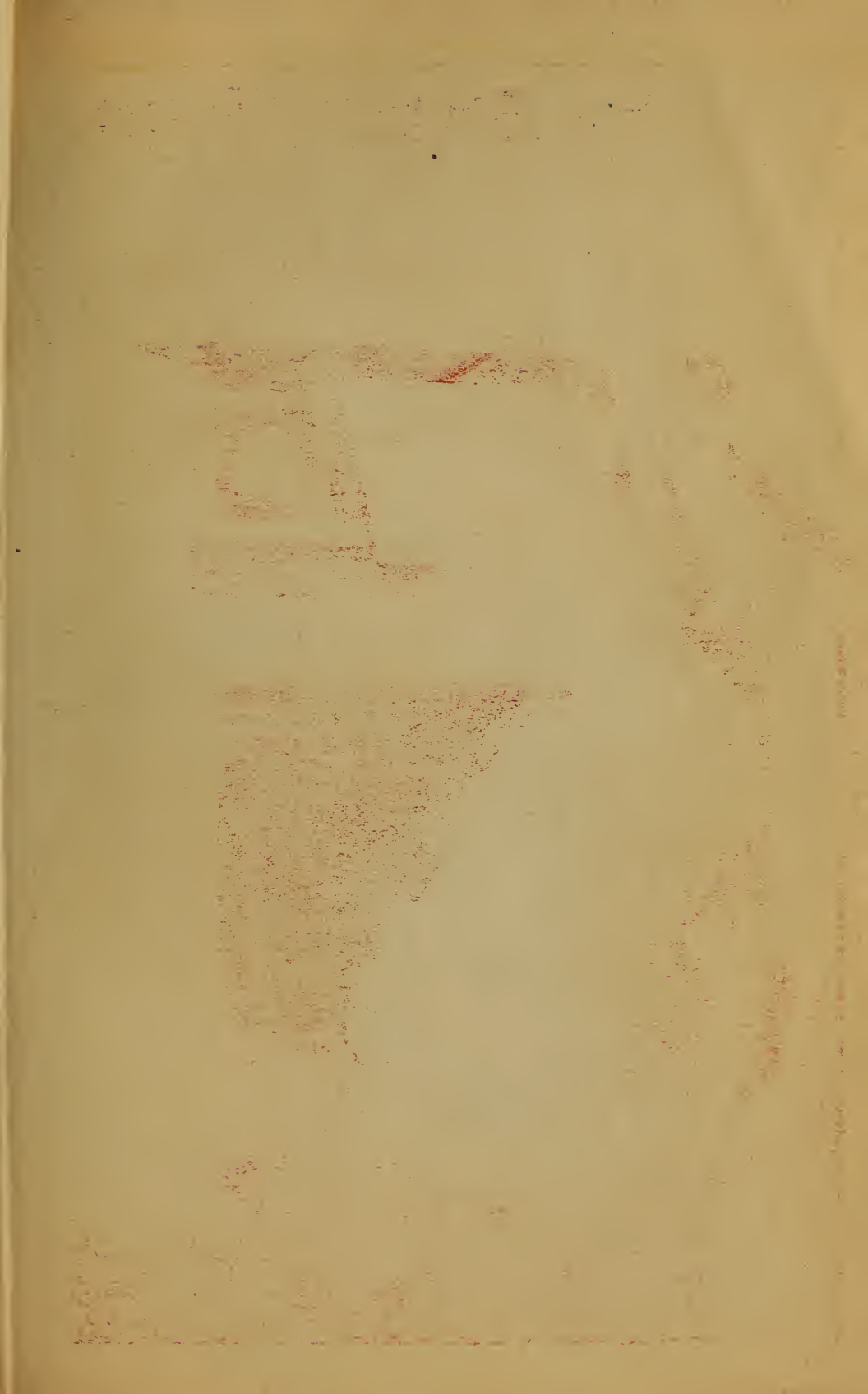
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 German Maennerchor.
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